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Textile World

JULY, 1955

What Mills Plan To Do in The Next Four Years

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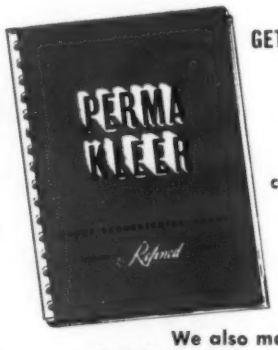

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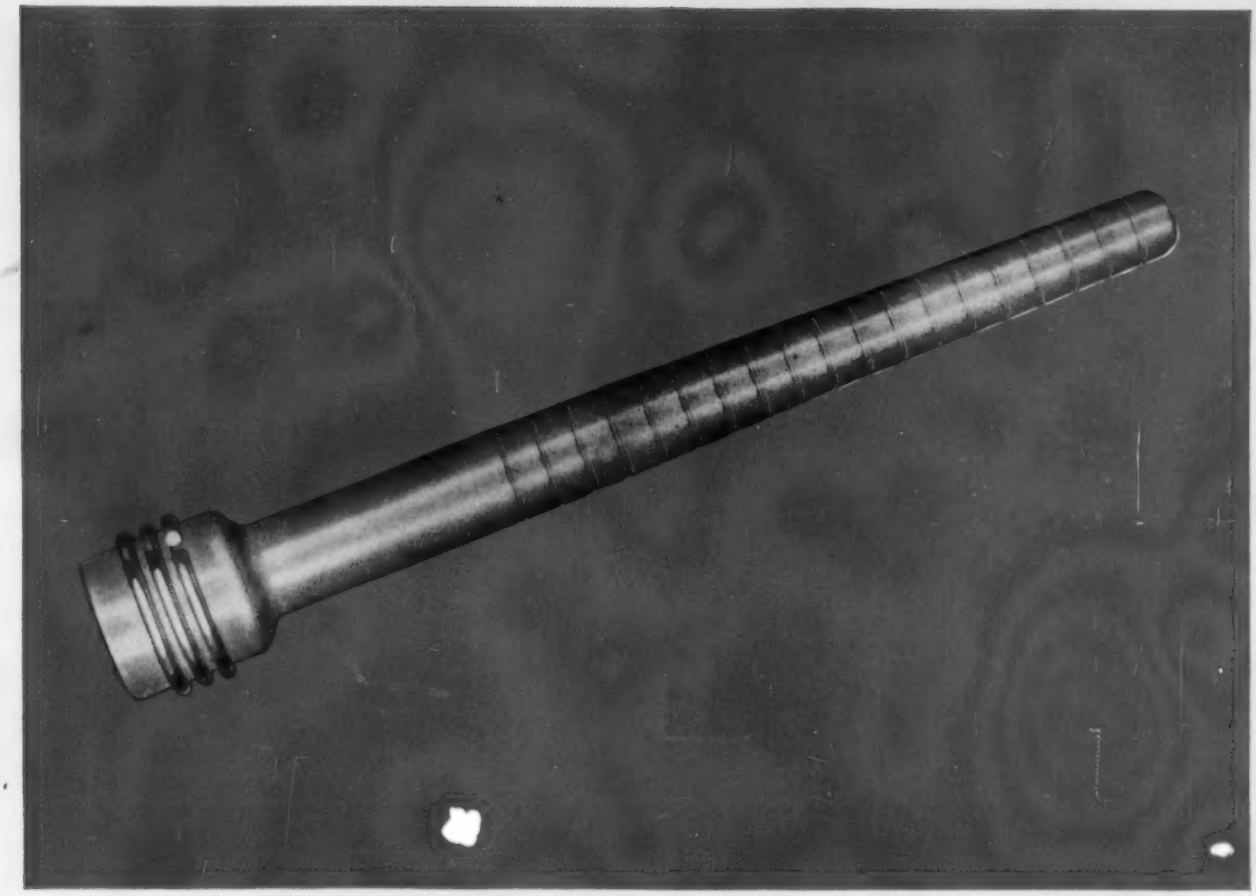

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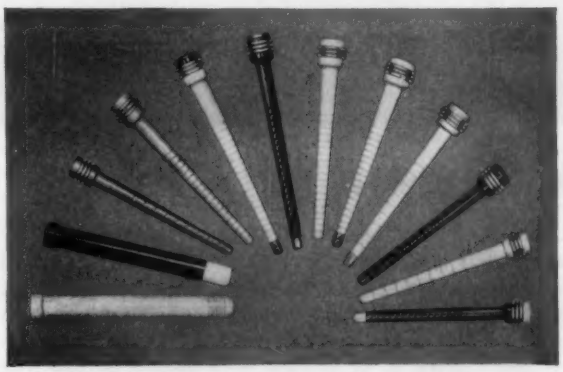

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Japanese Mills Curtail

Japan's cotton-textile industry is in the doldrums. The Ministry of International Trade and Industry recommended a 12% slash in the production of cotton yarn and cloth during the months of May and June and planned to issue a directive curtailing the expansion of weaving facilities.

Cotton-yarn production during the first quarter of 1955 was off 10.7% from the first quarter of 1954. Cotton-fabric output was 711-million square yards during the first quarter, 3.7% lower than the corresponding period of 1954.

Exports of cotton yarn were 40.7% lower during the first quarter of 1955 than during the last quarter of 1954 but only 1.9% less than the corresponding period of the previous year. Exports of cotton fabrics were 28.7% lower than in the last quarter of 1954 and 23% lower than the same period of last year.

Macy To Push Jap Goods

R. H. Macy & Co. plans an exhibition and sale of Japanese goods to cover an entire floor, according to Leo Martinuzzi, vice president in charge of foreign operations. Macy plans to send experts to Japan to assist Japanese manufacturers in designing goods for the American market.

Stretch-Yarn Patents

New developments in stretch-yarn processing and marketing have been made possible by agreements signed between Heberlein Patent Corp. and Universal Winding Co.

Customers and licensees of Universal are now released from liability for patent infringement for processing stretch yarn on Universal equipment. Each user of the Universal method can now make a separate licensing arrangement with Herberlein if the yarn is made in accordance with Herberlein standards. The agreement also permits the use of the Helanca trademark on both nylon and Dacron stretch yarns.

Herberlein executives state that they are now willing to negotiate license arrangements with any qualified company.

More Hosiery Consumption

Three gradual changes in population trends will insure a steady growth of women's hosiery consumption, Arno H. Johnson, vice president, J. Walter Thompson Co., told the 1955 Hosiery Industry Conference at Atlantic City.

The changes are:

1. More families are moving from farms to cities and suburbs. Farm women spend half as much on hosiery as city folk.

2. Family incomes are gradually increasing. As incomes increase, hosiery sales increase.

3. The number of women reaching the age of 21 is increasing rapidly and will continue to do so for several years. This age group is the largest consumer group of hosiery.

New Futures Contract

A new contract for the future delivery of cotton was recently recommended to the New York Cotton Exchange by the Board of Managers. The contract would provide for a basis staple of 1 in. instead of $\frac{15}{16}$ in. The minimum-length staple for the new contract is $\frac{33}{32}$ in. instead of $\frac{7}{8}$ in. Micronaire reading is raised from 3.3 to 3.5 The change would become effective in October, 1956, if approved.

Mill Developments

► Cranston Print Works Co. recently unveiled a new cotton finish said to virtually eliminate the need for ironing. The finish is called Dri-Smooth and was developed principally for 80x80, 4.00 carded print cloth. The physical properties of the finish are described as a resin-chemical compound.

► A soil-retardant chemical, designed to keep rugs, carpets, fabrics, and other surfaces clean and fresh looking even when dirt is applied directly, has been announced by Du Pont. The chemical, called Ludox, is an extremely fine colloidol silica that fills up the microscopically small pits and crevices in which dirt particles become imbedded.

► A new finish for cotton fabrics that permits machine laundering of apparel through the entire washing and drying cycle has been announced by the Cotton Apparel Fabrics Div., Pacific Mills, Burlington Industries. The finish is said to eliminate the need for drip-drying.

► Aluminized pipe jacketing resistant to fire, acid, and water has been developed by the Textile Div. of United States Rubber Co. Made of aluminum foil laminated onto vaporproofed asbestos cloth, it can be used to cover pipe insulation in heating, piping, refrigeration, and air-conditioning systems.

► Beaunit Mills, Inc., New York, has developed a double-faced nylon fleece without lamination that is 100%

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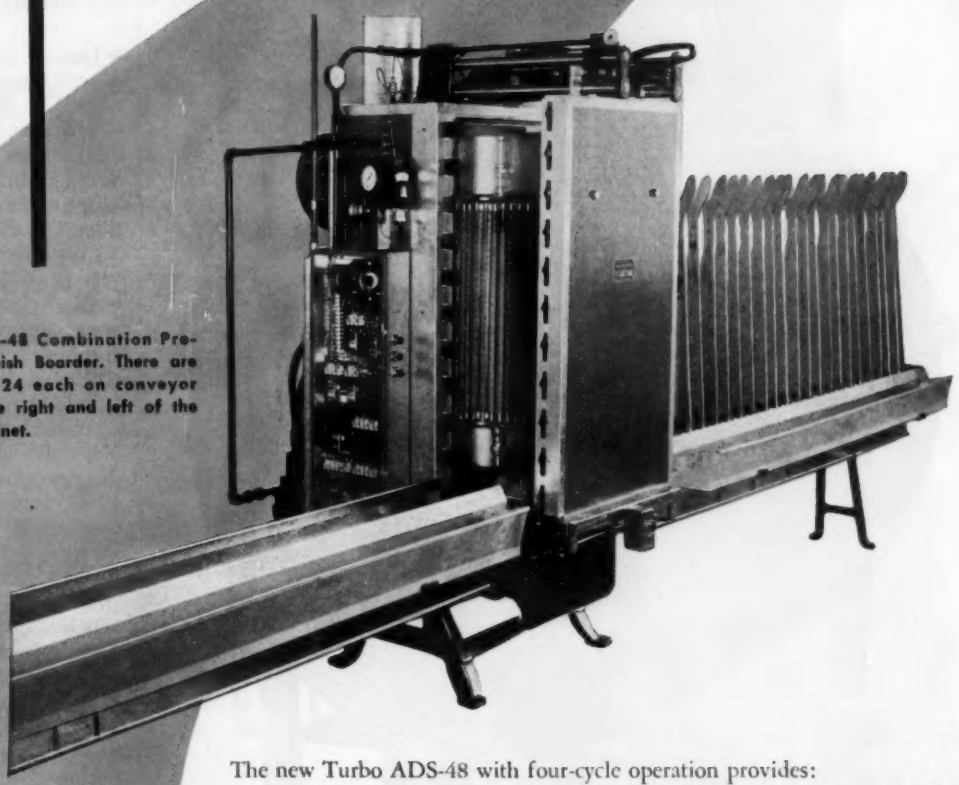

Turbo ADS-48 Combination Preboarder/Finish Boarder. There are 48 forms, 24 each on conveyor belts to the right and left of the setting cabinet.

The new Turbo ADS-48 with four-cycle operation provides:

(1) timed preheating and preconditioning boards and fabrics to uniform temperatures and dryness for the control of excessive condensation.

(2) timed solenoid-controlled air expulsion allowing for top preboarding temperatures to be reached quickly at saturated steam table pressures, further reducing condensation. The higher pressures necessary for an air and steam mixture are avoided.

(3) timed temperature controlled steaming cycle can be shortened considerably, further checking excessive condensation.

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washable and weighs 14 oz. to the 42-in. yd. The goods are designed for baby buntings, crib blankets, and baby-carriage blankets.

Fiber News

► A continuous-filament yarn with outstanding sunlight resistance is now in commercial production, according to the Du Pont Textile Fibers Dept. The yarn, designated as Type 680, offers improved whiteness retention during processing and in use. The yarn is available in 40/13 and 70/34.

► During the first four months of this year, compared with the same months of 1954, sales of woven-wool apparel cloths have increased about 33%, according to the National Association of Wool Manufacturers. Fabrics invoiced by mills have risen about 20%. Unfilled orders as of April 1 were over 50% greater than a year earlier.

► Sheets, shirts, drapery and upholstery-slipcover fabric, men's trousers, and towels were the six largest users of cotton in 1954, the National Cotton Council has reported. These products accounted for approximately 2,400,000 bales, or 30%, of the total end-use consumption reported in the 1953-54 edition of *Cotton Counts Its Customers.*

► Eight new nylon yarns have been announced by Du Pont's Textile Fibers Dept. The yarns range from 7-den. monofilament to 15,120/2,520 industrial yarns. Of special interest is the 7-den. monofilament for fine hosiery, the 20/7 in dull finish for tricot knitting, and the 15,120/2,520 for heavy-duty industrial fabrics.

► Overcoats for sheep are in vogue in New Mexico. An estimated 50,000 sheep next winter will be wearing jackets made of 10-oz. duck to keep their fleeces cleaner.

► An 8-den. nylon staple fiber is now produced by Industrial Rayon Corp. The new product is expected to be particularly valuable to carpet manufacturers who want greater bulk and more bloom in cut-pile fabrics.

► A continued rise in the importance of woolens and a marked trend toward lighter-weight constructions are expected by The Wool Bureau. The production of men's and boys' woven-wool fabrics is steadily becoming more concentrated in the 9- to 13-oz. weight range.

► P. H. Hanes Knitting Co. is dropping cotton-and-wool underwear from

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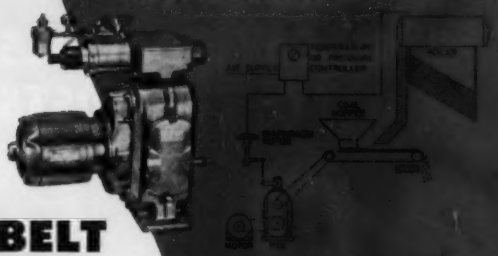

Actuated by air signals in response to pilot-operated temperature or pressure recorder, P.I.V. system regulates rate of coal fed to boiler.

MECHANICAL

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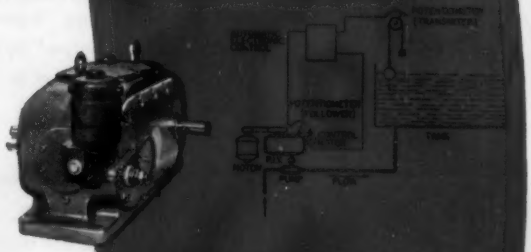

Liquid level in tank is held between desired limits. Float-operated potentiometer signals P.I.V. control system which varies pump speed.

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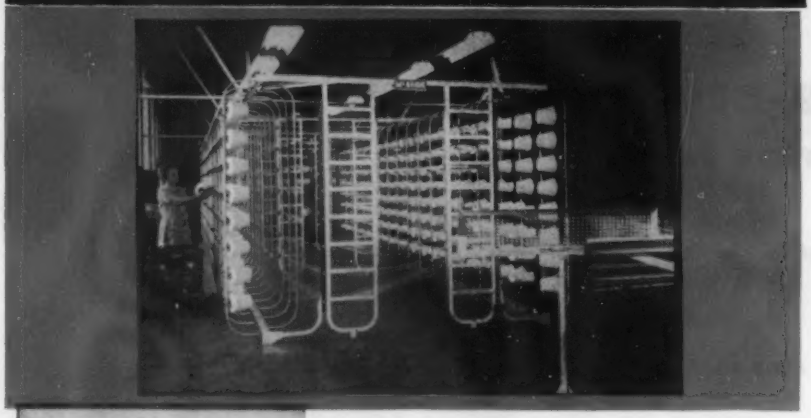
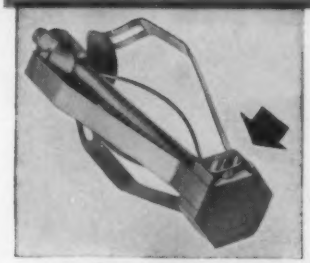
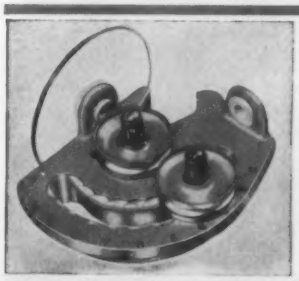
3 BIG REASONS WHY McBRIDE SRM MAGAZINE CREELS IMPROVE QUALITY—CUT COSTS

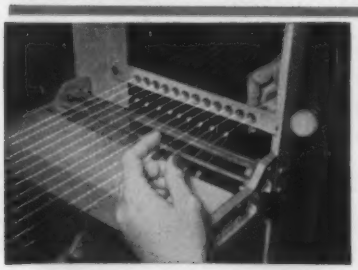




QUIK-CHANGE CONE HOLDER. Great versatility and instant package change. Note unique feather-touch thumb release.



TENSION-MASTER. Wide range of clearly numbered settings. Yarn tension at the beam may now be evenized by gradual increase of tension from rear of creel to front.



INSTANT-STOP. From 15-denier nylon to wire you are assured instant positive action. **Brand new** 3-way signal light spots broken ends, facilitates drawing-in. **Brand new** switches permit instant cast-out of individual ends. Versatile, compact, rugged, efficient, McBride SRM magazine creels are the most modern on the market. Individually engineered for you—to improve your quality, cut your costs. All 3 are readily adaptable to creels of other manufacture. Let McBride handle your warping needs.

CREELS for every purpose, CONE HOLDERS, STOP MOTIONS, TENSION CONTROLS, WARP BEAMS, FLANGES, CARPET INSPECTION TABLES, METAL AND WOOD ROLLS. COMPLETE ENGINEERING SERVICE IS PART OF EVERY McBRIDE INSTALLATION

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47 COLBORNE STREET
TORONTO 1, ONTARIO

its winter line next season and is featuring blends of Dynel and cotton in the warm winter numbers along with regular all-cotton items, according to Ralph Taylor, Hanes' New York sales manager.

▶Women's apparel made from Supima cotton, trademarked name for American-grown extra-long-staple cotton, probably will be introduced to the fashion market in spring and summer lines for 1956. Increased production of Pima S-1 makes this development possible.

▶Cotton has been steadily strengthening its position as the nation's foremost apparel fiber, according to the National Cotton council. The council said that cotton increased its share of the total apparel market from 51.5% in 1947 to 56.9% in 1954. These percentages are expressed in terms of equivalent pounds of raw cotton consumed for all fibers.

Letters From Readers

What's on your mind?

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinions appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD, 330 W. 42nd St., New York 36, N. Y.

IMPROVED OPENER

Dear Editor:

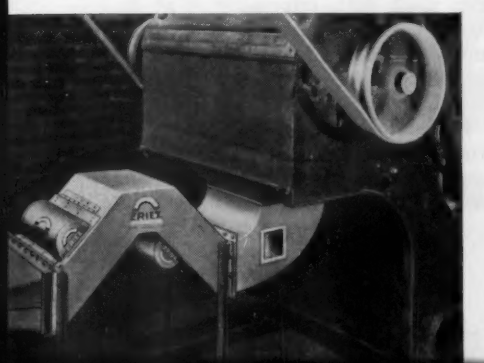
We have received a number of requests through your journal for full details of one of our production machines, the Shirley Opener. These requests have been based on the para-

For more information, write direct or use Reader-Service post card.

OLD IRON PANTS AND THE MAGNET! A lady from yesterday with a metal-ribbed girdle wouldn't be safe next to an Eriez Magnet. She might easily be "hung-up" by the powerful Alnico V action. This idea of herculean power is practically applied in textile processing lines. Magnets remove dangerous tramp iron preventing fires, machinery damage and loss of production in cotton, woolen, rayon and waste mills. *All Eriez Magnets are non-electric, self-contained. They operate without any wires or attachments. Best of all their magnetic power lasts a lifetime. The first cost is the last.*

MAGNETIC IDEAS FROM ERIEZ

TRAMP IRON CAN'T GET OVER THIS HUMP. Eriez Permanent Non-electric Magnetic Humps offer the ideal method of removing dangerous tramp iron from material conveyed in pneumatic lines. The patented Eriez Hump consists of 2 powerful plate magnets in an enclosed sheet-metal housing. The hump design changes the direction of the flowing material, creating a mixing or tumbling action. This directional change of the moving material allows the magnets to catch and hold spark-producing tramp iron. Eriez Magnetic Humps bear the Associated Factory Mutual Stamp of Approval for installation in textile mills, and are heartily endorsed by insurance companies as a means of reducing mill fires caused by tramp iron. Want more information? . . . request Bulletin 563.



ERIEZ SPIKED-APRON MAGNET SPIKES METAL DAMAGE. Lawrence Garnet Co., Lawrence, Mass., produces garnet specialties of silk and worsted, white worsted and merino. As a precaution against tramp iron damage to the machines, Eriez Spiked-Apron Magnets were installed in the feeder boxes. This step proved highly successful, and the magnets removed large quantities of knitting needles, pieces of spindles, ring travellers, etc., from the processing lines. Previously, any metal such as this would put the machine out of use for days or even weeks, seriously curtailing production. So efficient were the magnets in preventing tramp iron damage, thus saving thousands of dollars, that when the company recently installed new machinery, it would not use it until Eriez Permanent Magnets had been added.

ERIEZ MAGNET IS WATCHDOG FOR THIS FLOCK. Cellusuede Products, Inc., Rockford, Ill., manufacturer of rayon, cotton and hair flock, protects its reputation and costly cutting knives with an Eriez Plate Magnet that pulls dangerous tramp iron from the raw material before it reaches the knife blades. The finished flock, used as a coating material for textiles, paper, metals, etc., and as a reinforcing material to strengthen rubber and plastic compositions, *must* be entirely free of metal contamination. Since installing the magnet, there has been no trace of stray metal, no damage to knives by tramp iron.

ERIEZ

Eriez' free booklet "Magnetic Ideas" can help you. Send for it without obligation. Address: Eriez Manufacturing Company, 101U Magnet Drive, Erie, Pa. Or, on your specific request Eriez' factory-trained field men backed by Eriez' laboratory and engineering know-how will be happy to study your particular problem, make a plant survey and offer helpful "Magnetic Ideas".

UCON Trade-Mark **water-soluble TEXTILE LUBRICANTS**

Just stir these lubricants into water and they're ready to apply. When their work is done, remove them with a water rinse. No emulsifying or coupling agents are needed to solubilize them . . . no costly alkalies or detergents are needed to remove them.

UCON Lubricants are non-petroleum products with *true*, scientific water-solubility.

For 5 years, UCON Lubricants were tested in every phase of wool lubrication. Now, they are used in regular production by woolen mills. Only 1 to 3% is needed to give maximum lubrication.

UCON Lubricants are universally efficient—give even running on all yarn counts. They have built-in "drag," which gives uniform draws even with finest yarns at limit spins. And, they minimize static.

Get the full story on UCON Textile Lubricants. Fill in and return the coupon *today*.

. . . . . .

UCON Trade-Mark **TEXTILE LUBRICANTS** *are products of:*

CARBIDE AND CARBON CHEMICALS COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.

CARBIDE AND CARBON CHEMICALS

Please send me complete information on UCON Textile Lubricants.

Name.....

Company.....Position.....

Address.....

.....

"Ucon" is a registered trade-mark of Union Carbide and Carbon Corporation.

graph reference F-2, which appeared in your January edition.

We note that you state a production of about 400 lbs. per hour, and in this connection we should like to inform you that this machine is now capable of a production that would maintain a lap production of up to 600 lbs. per hour.

TWEEDALES & SMALLEY (1920) LTD.
Castleton, Rochdale, England

CORRECTION

Through error, a portion of the story "7 Methods for Obtaining Rayon Shrinkage Control" [TW, May, '55, p. 214] was omitted.

To clear up any confusion that resulted, we are repeating in full the X-2 and Stanset methods:

The X-2 Process

The X-2 process follows the general formula:

5% X-2 (aldehyde product)
8% starch-like stiffener
1.25% softener
5.0% catalyst
Water to volume

The stiffener may be a nonchlorine-retentive resin instead of starch. Shrinkage control by this method is excellent.

The Stanset Process

A more recent product is Stanset D-12, described as an aldehyde condensate. Variations in hand may be obtained by the addition of D-51, a nonchlorine-retentive resin. Proper use of this process gives excellent shrinkage control. The Stanset formula is:

4% Stanset D-12
5% Stanset D-51
0.5% softener
2.0% sodium bisulfate
1.25% sodium sulfate
Water to volume

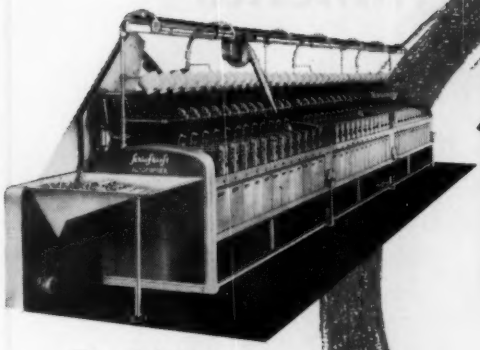
WORKER MORALE

Dear Editor:

Mill management must think of morale as a broad principle and concern itself with improving it at industry levels. Foremen and other supervisors, however, should keep close check on morale as it affects each individual worker.

In general, some prompt and special attention ought to be given to the case of any employee who has not received a morale-lifting treatment by

CONTINUED ON PAGE 212



The Schlafhorst Autocopser

Autocopser's Exclusive

ROTARY YARN GUIDE

makes continuous quilling speeds of 10,500 - 12,000 R. P. M. an actual daily performance in hundreds of mills!

SPEED = *lower investment cost*

SPEED = *higher production*

SPEED + *rotary yarn guide* = *no yarn guide wear*

SPEED + *yarn guide design* = *no yarn damage*

SPEED + *quilling know-how* = *superior filling quality*

Schlafhorst

AUTOCOPSER

First Name in Automatic Quillers the World Over

Sold and Serviced By

THE TERRELL MACHINE COMPANY, INC., 3000 S. BLVD., CHARLOTTE, N.C.

From wool to the new synthetics—

When you use soap

Colgate Formula 10 does the best job!

Gives a better final result. 92% Sodium Oleate . . . titer on the fatty acids 10° Centigrade . . . easily dissolved . . . excellent detergent effect . . . mild fulling action when you want it. Easily rinsed at low temperatures with no bad odor left in the fabric.

Yes, you can depend on COLGATE FORMULA 10* for dozens of textile processing and finishing jobs.

For low-temperature washing *ordinarily requiring olive oil soaps*, try COLGATE FORMULA 25*.

*Sold in eastern states only.

See your local C. P. representative for details, or write today to our Industrial Department.

FREE! New 1955 Handy Soap and Synthetic Detergent Buying Guide tells you the right soap for every purpose. Get a copy from your C. P. representative, or write us at any one of the offices listed below.

Colgate-Palmolive Company

Jersey City 2, N. J. • Atlanta 5, Ga. • Chicago 11, Ill.

When the Fashion Show "Ad Libs" a Quick Change

M-P

means

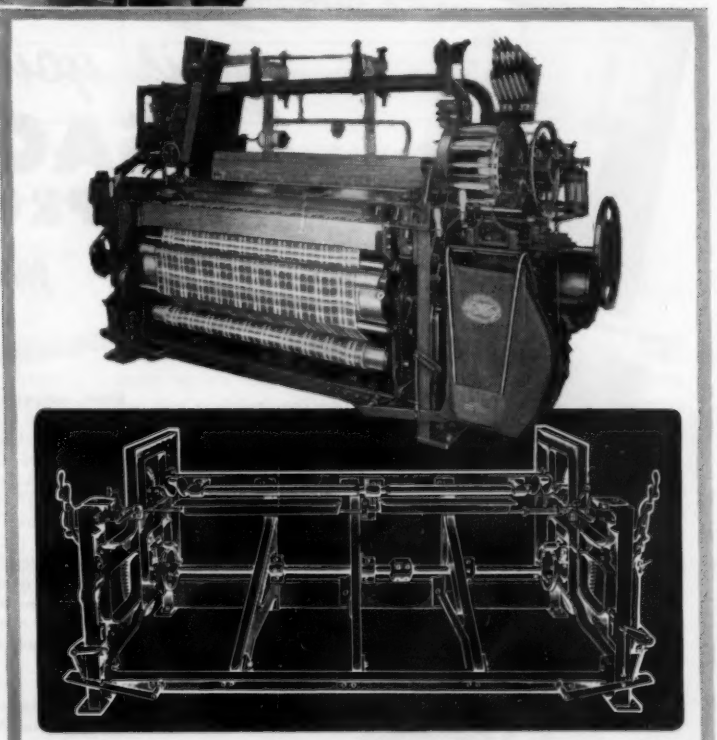
Mill-Protection!

If the prepared script is suddenly thrown away . . . and unfamiliar "new lines" thrown in . . . this could mean curtains for *unprotected* mills.

And these are the mills that do not have the *quick* convertibility of C&K's new Multi-Purpose Looms . . . mills whose weave rooms, for example, are limited by non-convertible types of looms.

On the other hand, modern weave rooms equipped with **M-P** Looms are always ready for a fashion-forced "quick change" . . . because of the unequalled range of letoffs, takeups, shedding mechanisms, feelers, and lay constructions . . . *all available on the same basic loom frame.*

So make sure that surprise switches in fabric constructions *can't* ring down the curtain on *your* mill's performance. See C&K today.



In black panel: This is the basic frame for the entire **M-P** line of looms. *Above the panel:* An **M-P** 20 harness (15/32" gauge) 4 x 1 box Automatic Dobby Loom, one of the many types which can be built on this same basic frame. Have your C&K representative show you the *full range* of **M-P** Convertibility.

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are **WOVEN** Fabrics.

Crompton & Knowles LOOM WORKS

WORCESTER 1, MASSACHUSETTS, U. S. A.

Charlotte, N. C. • Philadelphia, Pa. • Allentown, Pa.

Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.

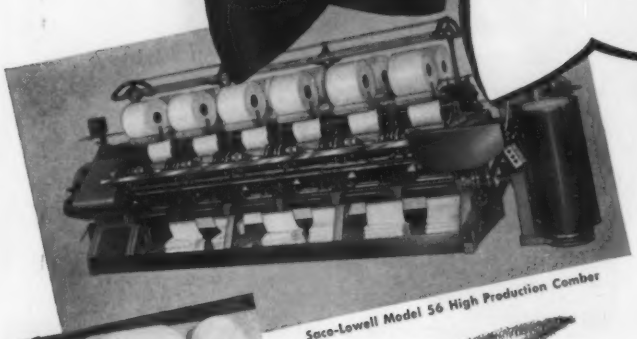
A NEW, REVOLUTIONARY CONCEPT IN *Comber* DESIGN...

PRODUCTION 57 LBS. PER HOUR

COMBING EFFICIENCY 95%

DETACHING EFFICIENCY 95%

VARIATION 12%



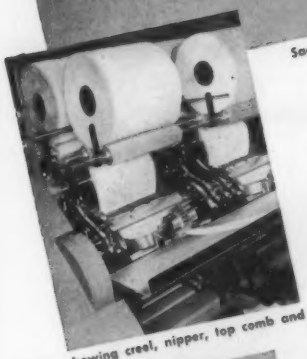
Saco-Lowell Model 56 High Production Comber

This and more is yours with the **NEW**

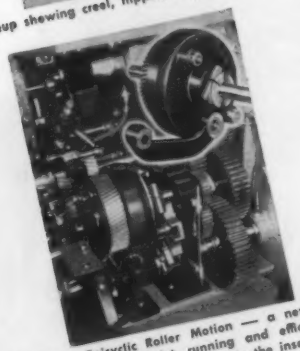
SACO-LOWELL

HIGH PRODUCTION COMBER

MODEL 56



Closeup showing creel, nipper, top comb and calender roll.



The Edfors Epicyclic Roller Motion — a new design which is accurate, quiet running and efficient. The Epicyclic Gear Assembly is shown in the insert.

The new coiler assembly with 14" or 15" cans and super-sensitive stop motion.

Here, unquestionably, is the "champion" – a high production comber that sets a new standard of efficiency from the standpoints of production per man hour, uniformity of sliver, recovery of fibre and low cost maintenance. This new Saco-Lowell Comber, with 800 grain lap, at 95% efficiency, produces 57 lbs. per hour — a figure unequalled by any other comber.

The new, Edfors Epicyclic Roller Motion produces a piecing so near perfection that the overlap is generally impossible to detect with the naked eye. Other improvements include: automatic top and bottom clearers; chrome plated feed and detaching rolls; a new, super efficient nipper frame, actuated by compression springs, and equipped with shock absorber bumpers; and, extensive use of anti-friction rolls.

This new Saco-Lowell Comber has Bijur equipment for automatic lubrication. It delivers a metered quantity of oil to all points requiring periodic lubrication.

Contact your nearest Saco-Lowell Sales Office — an engineer will be glad to supply you with complete details and arrange a demonstration.

SACO-LOWELL

60 BATTERYMARCH STREET, BOSTON 10, MASS.

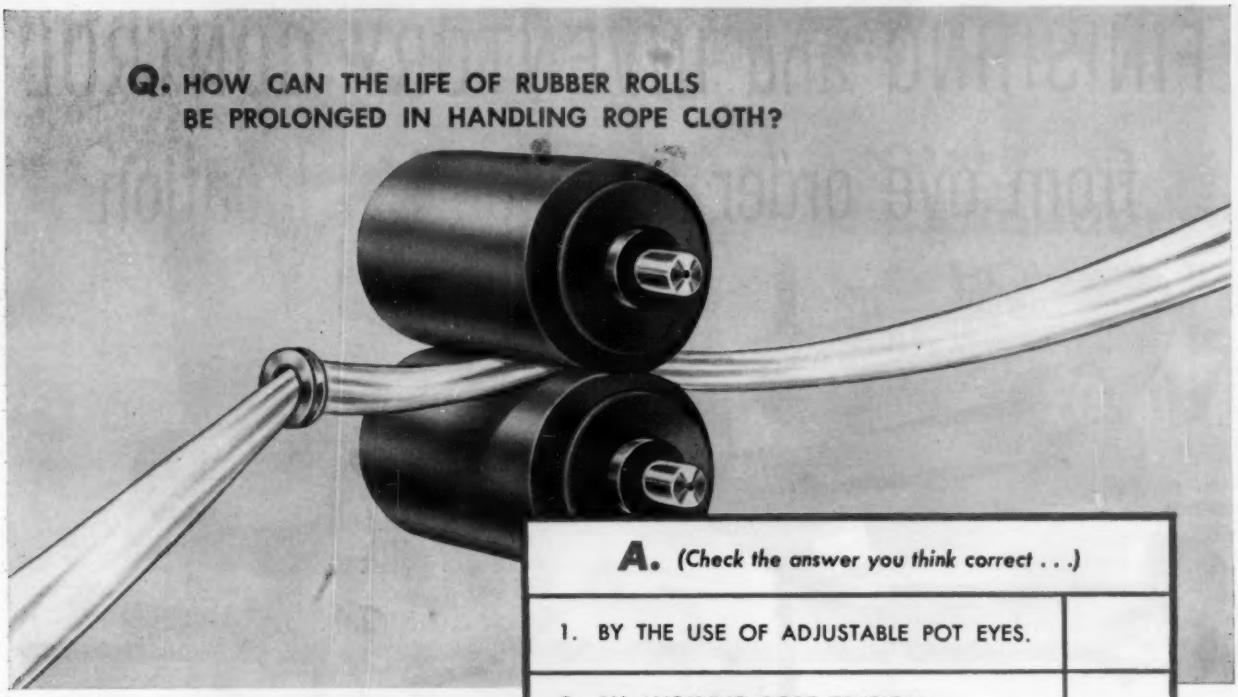
Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.

SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

STOWE-WOODWARD Maintenance Tips

for better finishing at lower cost

Q. HOW CAN THE LIFE OF RUBBER ROLLS BE PROLONGED IN HANDLING ROPE CLOTH?



A. *(Check the answer you think correct . . .)*	
1. BY THE USE OF ADJUSTABLE POT EYES.	
2. BY AVOIDING ROPE TENSION.	
3. BY AVOIDING KNOTS OR LAP-OVERS.	

You'll find the correct answer in these Maintenance Tips

All three answers are correct. Most mill men know this, but many neglect these simple precautions.

Cloth ropes, by their very nature, place an unusual strain on rubber covered rolls; and even though these rolls are small, considerable savings may be realized by the installation of adjustable pot eyes, equalizing the wear evenly across the entire face of the roll.

Undue tension on the rope . . . either entering or leaving the rolls . . . increases maintenance costs to a marked degree. Tension causes either pull or drag on the roll surface, resulting in an abrasive wear which hastens the need for regrinding the roll . . . and does the cloth no good.

Roll pressures should be maintained at the minimum which results in efficient extraction to compensate for the sudden jarring increase in pressure which takes place when stitched ends, knots, or lap-overs pass through the nip.

Beyond a certain pressure the law of diminishing returns comes into effect, and roll wear increases rapidly without a proportional increase in extraction.

Your Stowe-Woodward Sales Engineer will be glad to help you with any problem regarding the selection, care, or use of rubber covered rolls. His counsel can help you cut operating costs . . . take advantage of it.

"RUBBER ROLLS with a REPUTATION"

S-W INC.

STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN — NEWTON 64, MASSACHUSETTS — GRIFFIN, GEORGIA

POSITIVE

FINISHING and INVENTORY CONTROL

from dye order to stock bin location

IBM TEXTILE DEPARTMENT SPECIALIZES IN PUNCHED CARD CONTROL METHODS FOR THE TEXTILE INDUSTRY.

Right from the dye order and greige bale slips, IBM's punched cards give pin-point control of each cut of cloth through every in-process production step—to its exact bin location! These same IBM cut cards automatically prepare production figures, finishing loss or gain, and quality analyses. From them, invoices and bills of lading are also prepared.

IBM punched cards are "working" documents containing all vital production and inventory data. Processed through IBM equipment, these cards are automatically arranged, listed and tabulated into accurate, weekly inventory position reports. Now you can have the up-to-date information you need to plan production against sales . . . to give you a competitive advantage in today's fast-moving markets!

IBM has experience in the development of new and economical machine accounting methods for mills. Traditional IBM reliability is your assurance of expert service as well as the finest of data processing equipment. For complete details for *your* mill operation, contact your local IBM representative, or write: TEXTILE DEPARTMENT, International Business Machines Corporation, 590 Madison Ave., New York 22, N. Y.

IBM® DATA PROCESSING

WORLD'S LARGEST PRODUCER OF DATA PROCESSING MACHINES

NOW...MORE WORK with HYDRATORK!

Clark Carloader sets new standards for the industry!

NEW! Increased engine power gives you faster acceleration, faster travel speeds, power reserve for extra work-loads.

NEW! Faster lifting speeds. Lifting speed when loaded has been increased to 37 feet per minute.

NEW! Improved Hydratork Drive has greater gear reduction to convert higher engine speeds for more power.

NEW! Top gradeability. The most efficient operating power-train on the market today, provides power when you need it to climb the steepest grades.

No clutch—no gears to shift gives you better maneuverability, less driver fatigue—MORE WORK! Power multiplication through torque converter gives you extra power, smooth acceleration —MORE WORK! No clutch means easier driving, less down-time—MORE WORK! Anyway you look at it . . . you'll get *more* work with Clark's Hydratork Carloader. Ask your local Clark dealer for details.

A BETTER BUY WITH LOCAL SUPPLY—*Genuine Clark Parts*

CLARK® EQUIPMENT

Industrial Truck Division
CLARK EQUIPMENT COMPANY
Battle Creek 27, Michigan

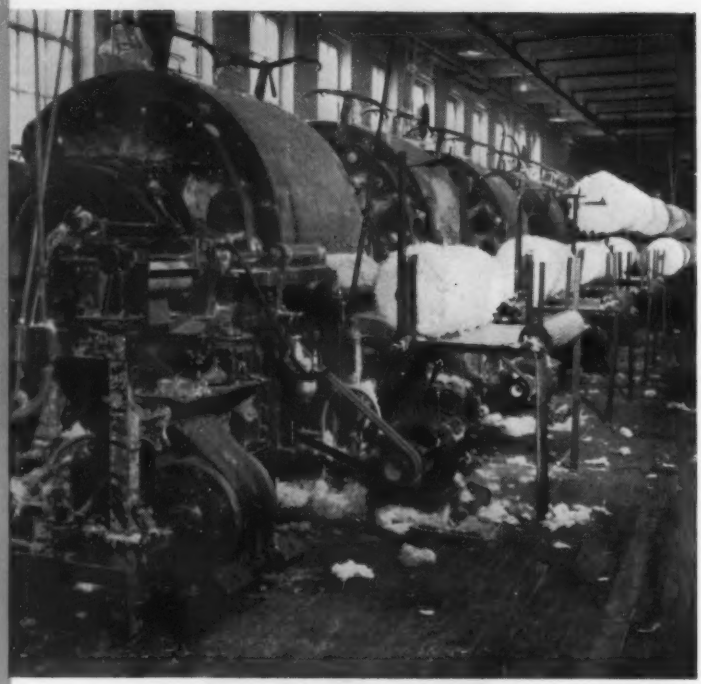
Engineered to blast out clogging lint!

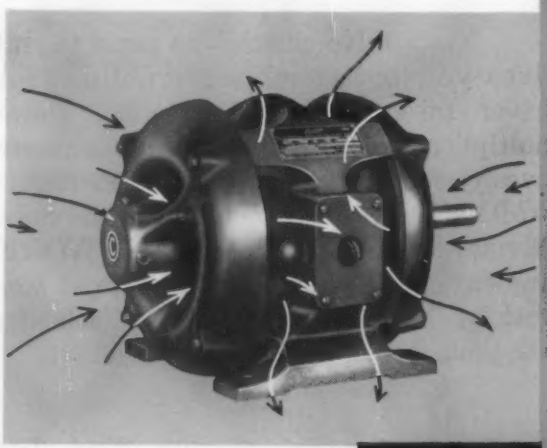
Century Performance-Rated©

TEXTILE MOTORS

The wide open air passages in this Century Textile Motor frame are specially engineered to avoid clogging. You can actually see the lint pass through as the built-in, high-capacity fan blasts a stream of cooling air over the surface of the motor.

Even in the most lint-laden rooms, Century Textile Motors are Performance-Rated to run at normal temperatures with a minimum of maintenance. They are available in a wide range of types and sizes to operate your equipment at top performance.





For information, contact your nearby Century Sales Office or Distributor.

Performance-Rated© Motors
1/8 to 400 H. P.

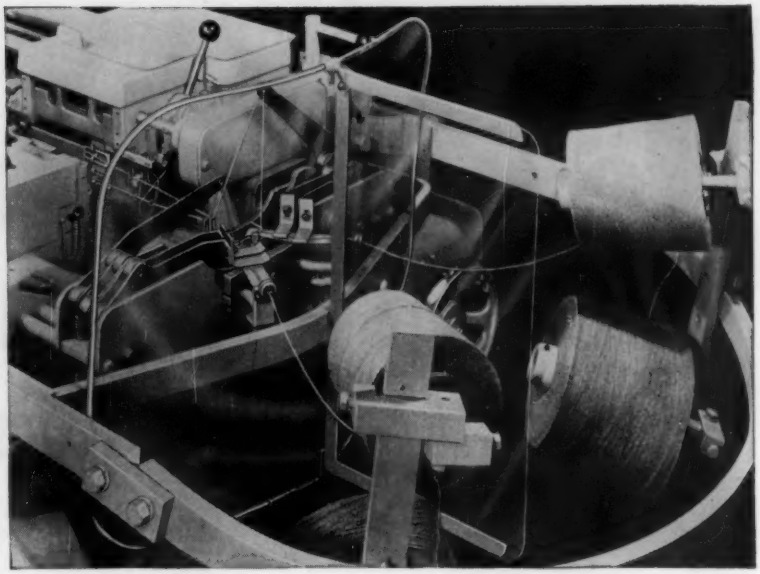
CENTURY ELECTRIC COMPANY

1806 Pine Street, St. Louis 3, Missouri • *Offices and Stock Points in Principal Cities*

23

For more information, write direct or use Reader-Service post card.

NEW FILLING MIX UNIT



opens new fields for owners of Warner & Swasey-Sulzer Weaving Machines®!

Weave more uniform, higher quality cloth—at 240 p.p.m.

Yes, now the Warner & Swasey-Sulzer Weaving Machine offers you greater flexibility—a wider range of use. With the new Filling Mix Unit, alternately drawing from two different packages, it blends single picks of yarn from each at speeds unequalled by any other machine!

This means higher quality fabrics—faster, lower cost production. It eliminates the possibility of filling bars. It minimizes any variations in yarn sizes, or variations in colors. A pick-back attachment makes it easy to avoid imperfections in the finished cloth.

And with this new unit you can weave alternate pick fabrics, using different colored yarns, worsteds and woolens, or different blends—previously considered too difficult or expensive for high production machines. It weaves these fabrics often for less than ¼ previous costs!

This new Filling Mix Unit is adaptable to all existing Warner & Swaseys, and is available on all new models. For full information on how this new unit can cut costs and speed production for you, call in your Warner & Swasey Field Representative for all the facts.

® Reg. U. S. Pat. Off.

SALES OFFICES

Main Office and Factory: 5701 Carnegie Ave., Cleveland 3, Ohio
61 Rivulet St., North Uxbridge, Mass. 6910 Market St., Philadelphia, Pa.
1820 Browning Ave., Charlotte 5, N. C.

75TH ANNIVERSARY YEAR
WARNER & SWASEY
Cleveland
PRECISION MACHINERY
1880 — 1955
TEXTILE MACHINERY DIVISION

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS . . . WITH A WARNER & SWASEY

New *Pneumafil* Collector

Uses Specially Designed Allis-Chalmers Motor

The recently developed *Pneumafil* "Economizer" Collector System means a further improvement in spinning room conditions.

An important new feature is the provision for discharging the air around a 360-degree periphery of the discharge cover. Air is gently released in all directions through 224 specially designed vents. There are no disturbing drafts.

SPECIAL MOTOR

An important component is the special Allis-Chalmers motor. Engineers of both Pneumafil Corporation and Allis-Chalmers Mfg. Co. combined their experience in this design.

Note that the smoothly curving front end forms the inner wall of the venturi air channel, funneling the air into the fan. The smooth, unobstructed air flow in this design provides adequate cooling. Exposed punchings of stator core also assist in heat dissipation. Heavy duty, size 304 sealed bearings are used to cut maintenance.

SERVICE EVERYWHERE

Users of the new *Pneumafil* "Economizer" System are assured prompt, dependable service on these Allis-Chalmers motors. Certified Service Shops in all major textile areas provide factory-approved methods and parts. Allis-Chalmers, Milwaukee 1, Wisconsin. A-4762

Other Allis-Chalmers Textile Drives

● **SPINNING**

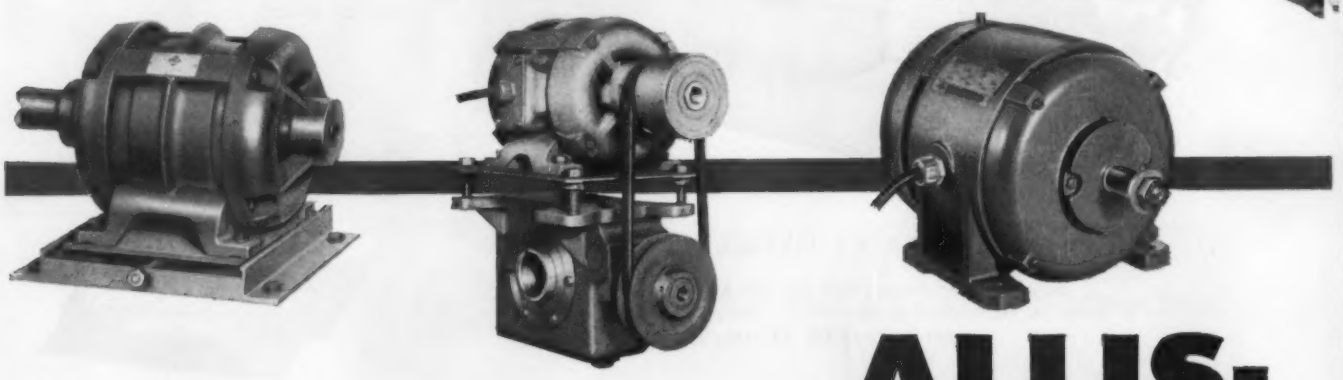
Wide-open air passages and powerful fans of *Quick-Clean* design sweep dirt and lint right through and out of these motors. Sealed, double-width bearings are used.

● **CARD DRIVE**

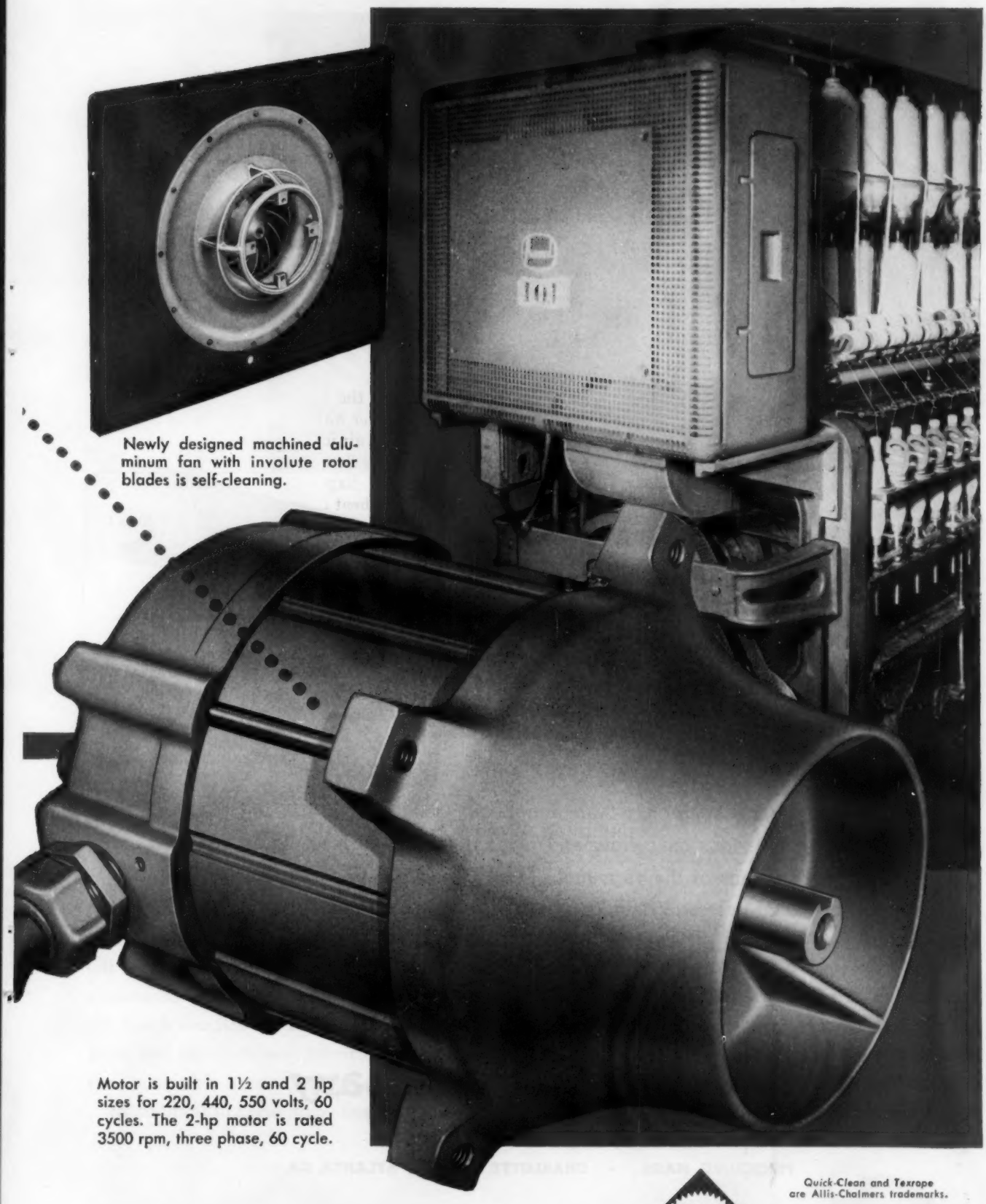
Allis-Chalmers combines a *Quick-Clean* motor, *Texrope* drive and an efficient gear reducer to make a compact, reasonably priced power-package for carding machines.

● **WEAVING**

Allis-Chalmers loom motor has oversize rotor, stator and bearings. Rotor diameter provides maximum inherent flywheel effect; slip produces minimum speed variation. External flywheel can be furnished.



ALLIS-



Newly designed machined aluminum fan with involute rotor blades is self-cleaning.

Motor is built in 1½ and 2 hp sizes for 220, 440, 550 volts, 60 cycles. The 2-hp motor is rated 3500 rpm, three phase, 60 cycle.

Quick-Clean and Texrope are Allis-Chalmers trademarks.

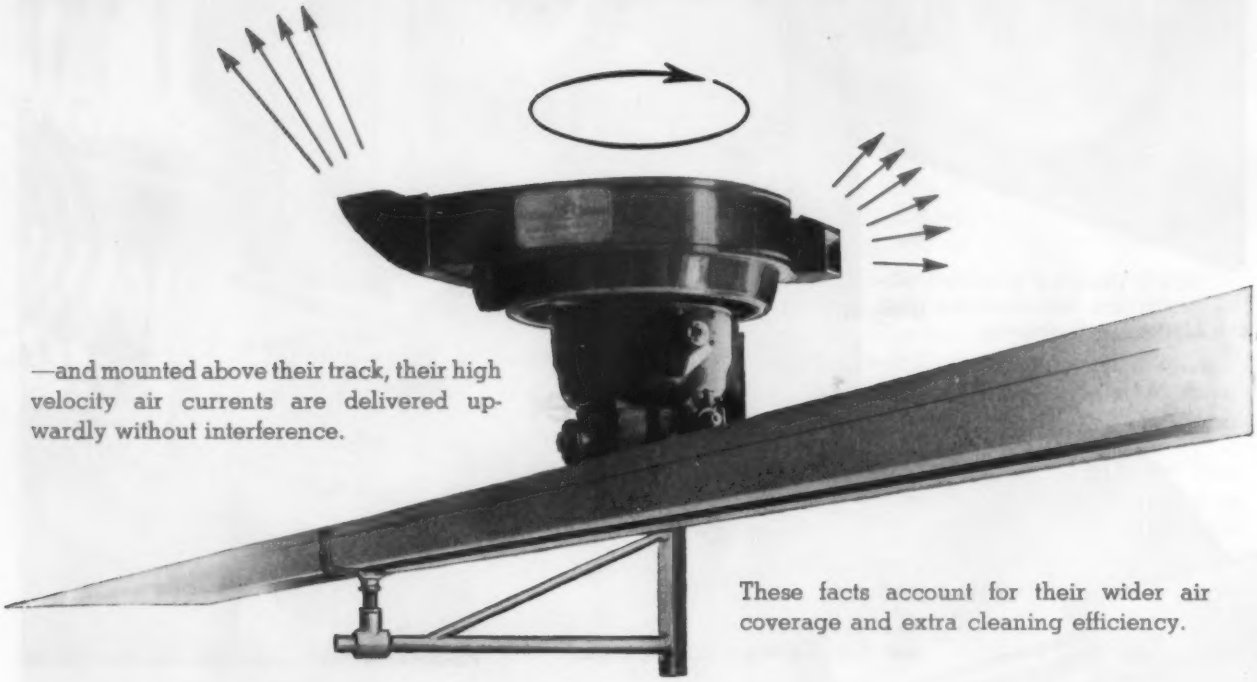
CHALMERS

A-C ALLIS-CHALMERS

Parks-Cramer

Room Cleaners Revolve Continuously

About a Vertical Axis



—and mounted above their track, their high velocity air currents are delivered upwardly without interference.

These facts account for their wider air coverage and extra cleaning efficiency.

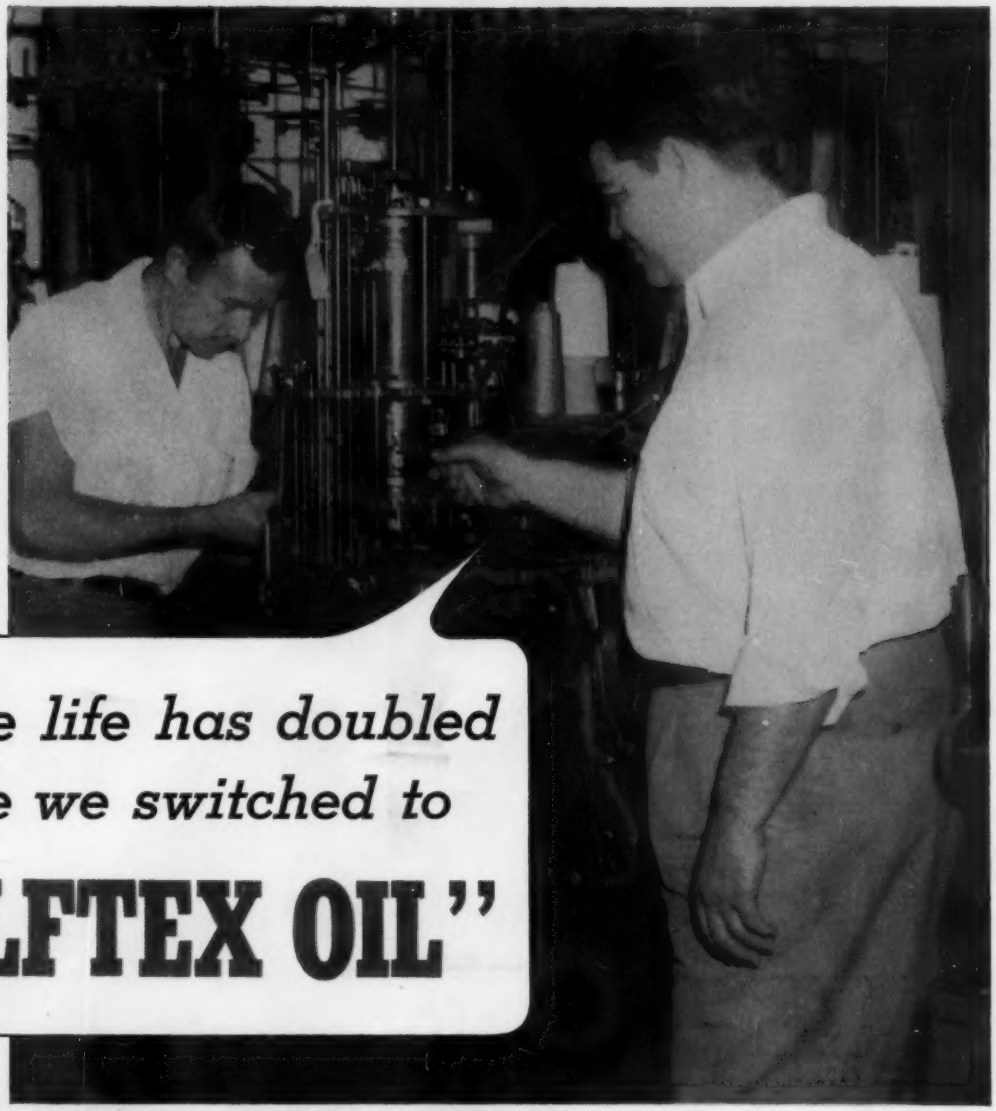
Parks-Cramer Up-draft and Room Cleaners prevent lint accumulations on ceiling and other overhead surfaces in all departments of the yarn mill. More than 3700 units already installed in over 350 mills.

Travel solo over cards—in tandem with frame cleaners over roving, spinning, twisting, warping and winding operations.

Parks-Cramer Company

Humidifying and Air Conditioning Since 1904
Traveling Cleaner Systems Since 1926

FITCHBURG, MASS. • CHARLOTTE, N.C. • ATLANTA, GA.



"Needle life has doubled since we switched to GULFTEX OIL"

says Mr. Glenn Powers, Superintendent
Continental Hosiery Company, Henderson, North Carolina

"Not only has needle life been doubled in our knitting machines since we switched to Gulftex Oil in 1953," says Mr. Powers, "but we have also eliminated rust through the use of this excellent oil. Latch needles are much cleaner, sliders are freer, and the machinery lubricated with Gulftex runs noticeably quieter and smoother."

In addition to these many fine qualities, Gulftex Oil has superior non-staining characteristics which make it the ideal lubricant for any application where the staining of fabrics is a problem.

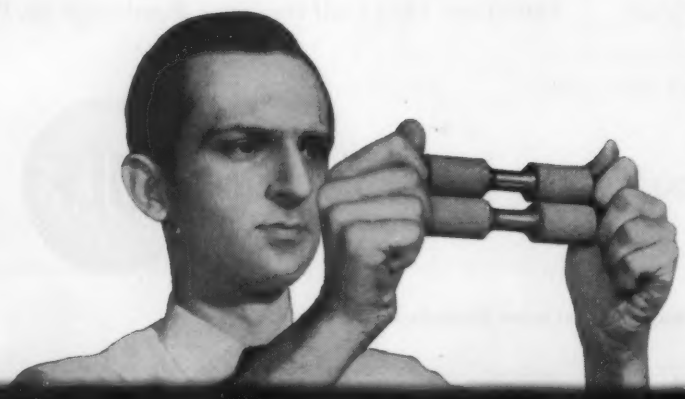
Call in a Gulf Sales Engineer today and have him demonstrate the advantages of Gulftex Oil in your mill. You can contact him at your nearest Gulf Office. Gulf Oil Corporation · Gulf Refining Company, 1822 Gulf Building, Pittsburgh 30, Pa.

THE FINEST PETROLEUM PRODUCTS FOR ALL YOUR NEEDS

GULF

These clearers were removed from a frame after Accotex NO-742-S Cots were run alongside cots of another kind for five hours. Board at right shows how NO-742-S Cots pack waste well back on clearer. At left, clearer shows serious eyebrowing permitted by other cots. Clearer covers were dyed black to get contrast between waste and cover.

Simple "Cover-to-Cover" test proves NO-742-S Cots resist grooving, spin top-quality yarn



Lift a pair of rolls off your frames, and hold them up to the light, cover-to-cover. If you see daylight between covers, cots are hollowed out and yarn control probably is faulty. When no light shows between cots, re-buffing is not needed. Eyebrow-resistant Armstrong NO-742-S Cots won't show light even after months on the frame.

. . . with NO-742-S Cots

EVEN WITH SHORT STAPLE FIBERS, NO-742-S ACCOTEX® COTS PREVENT SERIOUS EYEBROWING

One look at the boards above and you'll *know* why so many mills today use Armstrong NO-742-S Cots with flat clearers. With normal picking schedules, these cots eliminate troublesome eyebrowing . . . even after months of spinning. As a result, yarn irregularities and ends down caused by eyebrows are cut to a minimum.

You get this kind of performance from NO-742-S Cots because of their exclusive "constant friction" surface. This unique drafting surface has just the bite needed to pick up loose fibers and pack them well back under the clearers.

NO-742-S Cots also *stay rough* as they wear . . . and resist slicking or glazing. That's why they give consistently strong, clean yarn with as little as a single re-buffing per year.

Next time your Armstrong representative calls, ask him to help you set up test frames of NO-742-S or write us direct. It won't take you long to see the difference they make in controlling eyebrowing.

Send for the booklet, "Armstrong Textile Roll Coverings and Mill Supplies," and information on other Accotex® Cots. Write Armstrong Cork Company, Industrial Division, 6507 Dauphin St., Lancaster, Penna.

Armstrong ACCOTEX COTS

. . . used wherever performance counts

News about

B. F. Goodrich Chemical *raw materials*

Geon latices make many fabrics better in many ways:

TOP COATINGS—Geon latices provide maximum durability with minimum weight as finish coats on fabrics for luggage, upholstery, and other products requiring high wear-resistance. Coatings may be clear or pigmented—offer high gloss and excellent light stability—provide decorative, grease-proof, washable finishes.

PRE-COATINGS—Geon latices make excellent prime coats for loose fabrics, to improve top-coat adhesion and act as a barrier to excessive penetration of the top coating.

BINDERS—Natural and synthetic fibers are bound together by Geon latices to make strong, washable non-woven fabrics. Other Geon latex formulations are used as binders for metallic salts that provide resistance to stain or water, and as binders for pigments that lend decorative appeal.

SIZES-FILLERS-CARRIERS—As sizes, Geon latices increase the wear and ravel resistance of carpet backings, toughen felts for floor coverings and trunk linings. As fillers they are used in cotton processing to provide greater stiffness and strength. In other applications, Geon latices serve as carriers for specialty agents such as fungicides and flame inhibitors.

Geon latices are applied without the fire and toxicity hazards common to organic liquids. Methods of application include knife-coating, doctor kiss coating, immersion, spraying, printing, and impregnation. Viscosity, penetration, and coating weight are readily controlled, resulting in a product of utmost uniformity.

For technical information please write Dept. BY-4, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.
Cable address: Goodchemco.
In Canada: Kitchener, Ontario.

B. F. GOODRICH CHEMICAL COMPANY
A Division of The B. F. Goodrich Company

GEON RESINS • GOOD-RITE PLASTICIZERS . . . the ideal team to make products easier, better and more saleable.
GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors

SPEED CONTROL

FOR

AUTOMATIC PRODUCTION

WITH

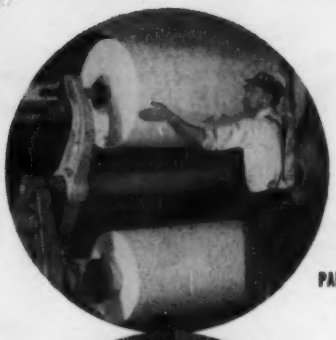
INFINITE SPEED RANGE

Completely unlike any conventional variable speed drive – SPECON controls production by the action or condition of the product being processed – with minimum operator attention. Everywhere in today's high speed industrial operations – steel, textiles, rubber, plastics and paper are but a few – this new design principle substantially lowers operating costs and assures higher product quality.

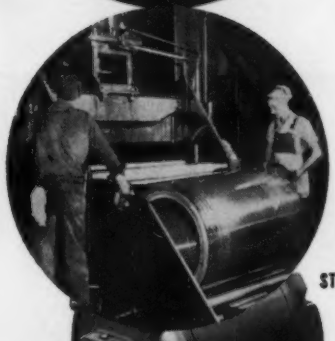
SPECON can play an important part in stepping up your production efficiency, too. We'll be pleased to show you how. Write to: Speed Control Div., Fairchild Engine & Airplane Corporation, St. Augustine, Fla.

FEATURES OF SPECON

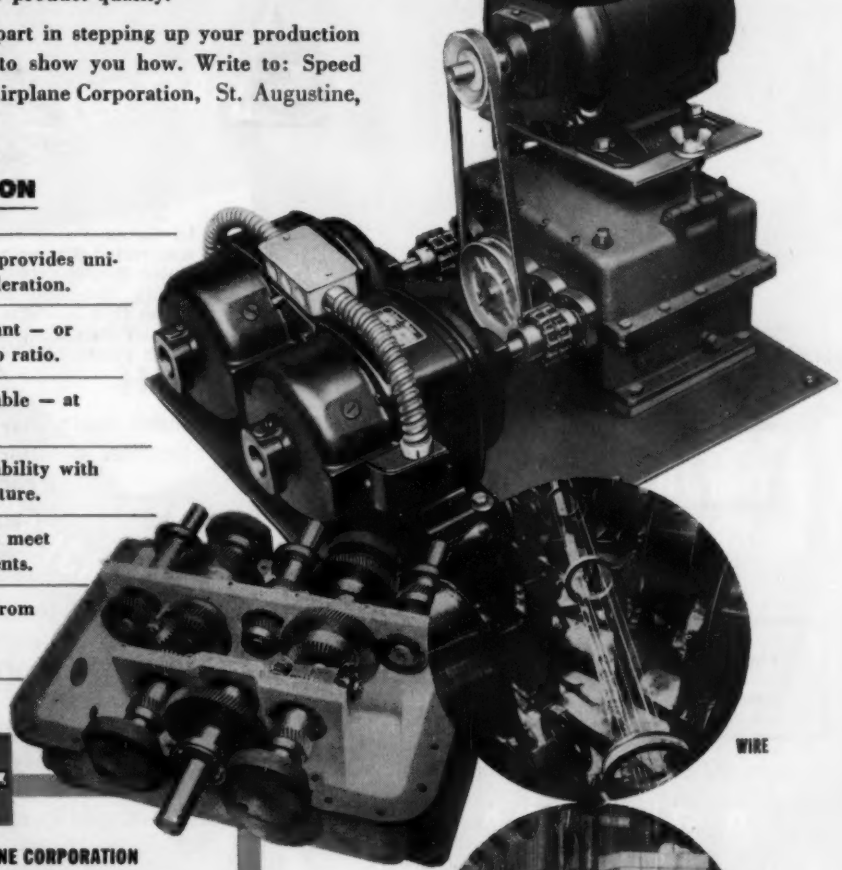
- ★ Instant automatic performance provides uniform uninterrupted speed acceleration.
- ★ Winding tension may be constant – or tapered for any desired build-up ratio.
- ★ Full torque continuously available – at low and zero speeds.
- ★ Unequalled safety and dependability with unique, positive adjustment feature.
- ★ Easy on-the-spot adjustments to meet changing production requirements.
- ★ Minimum maintenance results from standard interchangeable gears and motors.



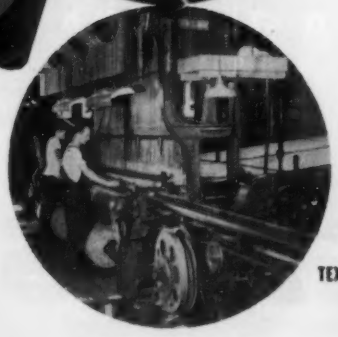
PAPER



STEEL



WIRE



TEXTILES

ENGINE AND AIRPLANE CORPORATION

FAIRCHILD

Speed Control Division

St. Augustine, Florida

Aircraft Division, Hagerstown, Maryland • Engine Division, Farmingdale, N.Y.
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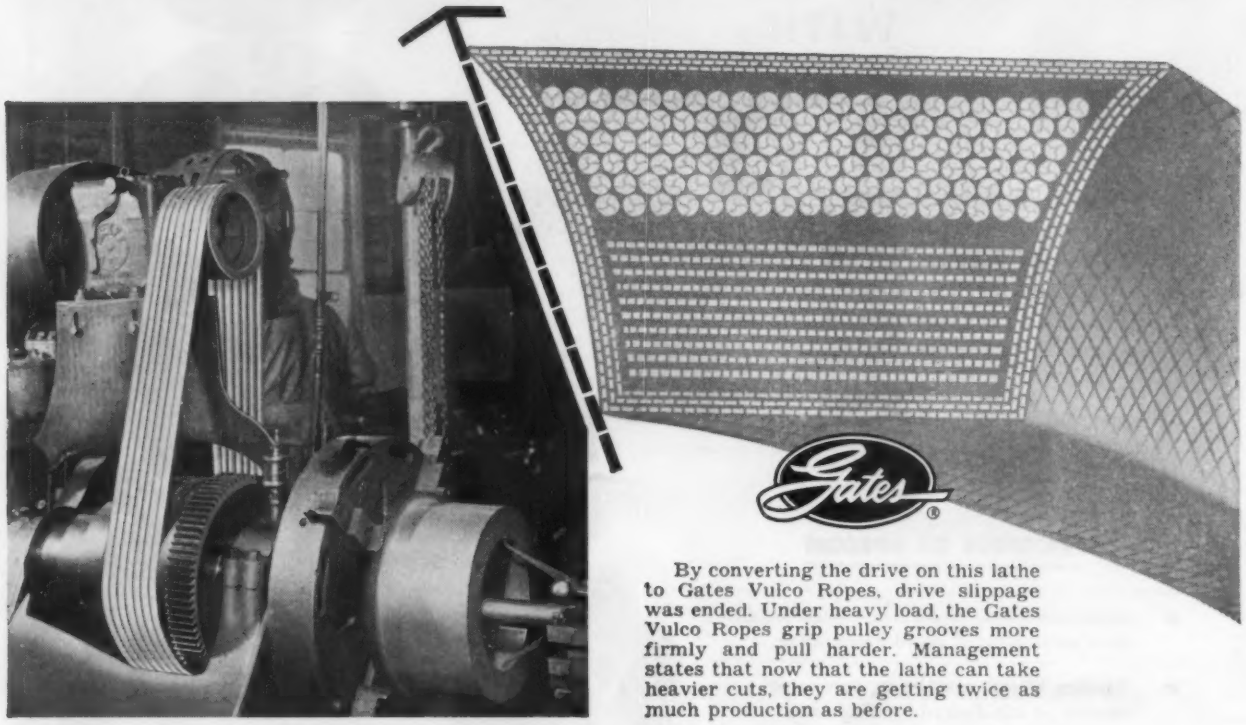
"Secret" of *lower* belt costs is concave sides



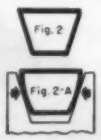
By converting the drive on this lathe to Gates Vulco Ropes, drive slippage was ended. Under heavy load, the Gates Vulco Ropes grip pulley grooves more firmly and pull harder. Management states that now that the lathe can take heavier cuts, they are getting twice as much production as before.

Plants that keep track of costs on drives know this: they get longer wear at *lower cost per year of service* when they specify Gates Vulco Ropes—the V-Belts with *concave sides.*

Here's WHY concave sides keep belt costs down:

When the Gates belt is bent around the sheave, the *precisely engineered* concave sides (Fig. 1) fill out and become straight (Fig. 1-A). Thus the belt makes uniform contact with the sides of the pulley.

This full, uniform contact assures *even distribution of wear.* Naturally, *even wear* means *longer wear.* And longer wear cuts belt replacement costs...reduces down time...contributes to profits.



Prove to yourself the value of concave sides

Bend a straight-sided belt (Fig. 2) and feel the sides *bulge out* around the bend. You see immediately that the bulging sides prevent an even fit in the pulley groove (Fig. 2-A). Uneven contact causes faster wear...increases belt replacement costs.

Reduce costs and down time for belt replacements—specify Gates Vulco Rope Drives—the V-Belt with *concave sides* (U.S. Patent 1813698). The Gates Rubber Co., Denver, Colorado—*World's Largest Maker of V-Belts.*

Gates Engineering Offices and Distributor Stocks are located in all industrial centers of the United States and Canada, and in 70 other countries throughout the world.

TPA 46-A

GATES VULCO ROPE DRIVES

For more information, write direct or use Reader-Service post card.

BRIGHTENING AGENT FOR PAD OR MANGLE APPLICATION ON COTTON OR RAYON FABRICS; APPLIED ALONE OR WITH RESIN, STARCH, SOFTENER, FILLER, ETC.

BLANCOPHOR HS-71 AND HS-76 ARE UNIQUE BECAUSE OF THEIR EXCEPTIONALLY HIGH SOLUBILITY IN WATER.

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THE OPTICAL WHITENING AGENT

PRODUCE BRILLIANT WHITES ON BLEACHED TEXTILES.

BLANCOPHOR HS BRANDS ARE LEVEL DYEING AND ARE RECOMMENDED FOR USE IN ALL TYPES OF EQUIPMENT, SUCH AS JIG, REEL AND PACKAGE MA...

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Super Tufter Yardage Machines

FOR EVERY TUFTING JOB

LARGE or SMALL

MODEL 208

- Sews maximum of 208 inches
- Produces finished carpeting up to 15 feet wide in Cut Pile, Short Loop and Long Loop
- Dual drive connected directly to main shaft
- Positive drive cloth and yarn feed
- With Pattern Control Attachment this machine can reproduce in loop pile any design that can be drawn on paper

MODEL 40

- Sews maximum of 40 inches
- Used chiefly as a pilot model for testing yarns and backing materials
- Produces stair runners, small throw rugs and bath mats
- Can be opened on one end to allow material to be rerun producing widths up to 120 inches

Other Super Tufter Yardage Machines
Available in 45″, 54″, 62″, 76″, 121″, and 168″ widths

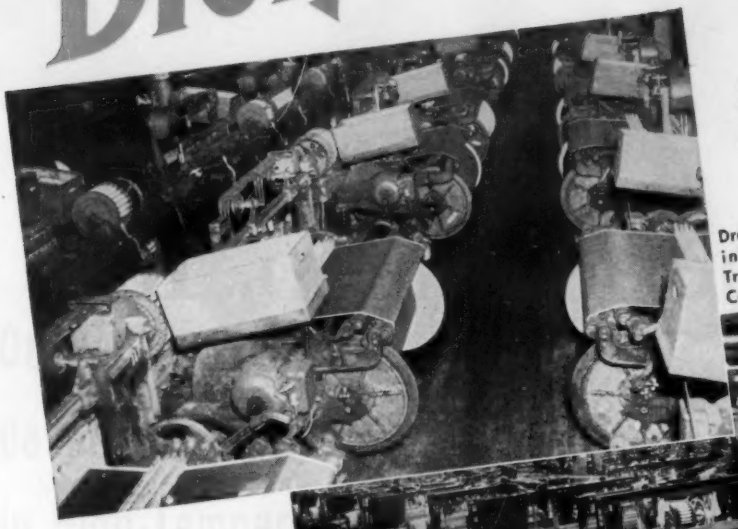
Super Tufter
MACHINERY COMPANY, INCORPORATED

212 First Avenue, North
Fort Oglethorpe, Georgia

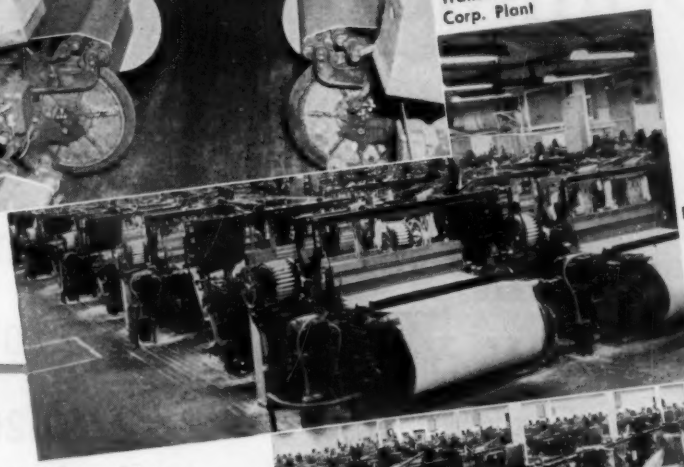
Diehl POWER TRANSMITTER

is assuring maximum weaving efficiency in leading mills

Thousands of Diehl Power Transmitters are operating DRAPER LOOMS in leading textile mills. Many have been in continuous operation for five years.



Draper X2 looms operating with Diehl Power Transmitters in Cone Mills Corp. Plant



Draper XD looms operating with Diehl Power Transmitters at Bibb Manufacturing Company, Columbus, Georgia.

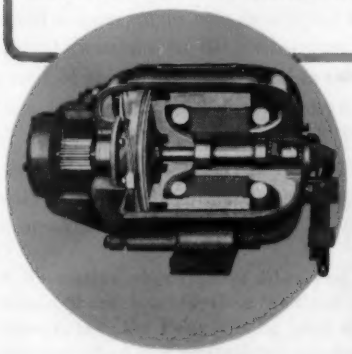
Draper XD looms operating with Diehl Power Transmitters at the Lyons Plant, Synthetic Division, M. Lowenstein and Sons.

MILL MEN ARE ENTHUSIASTIC ABOUT THESE FEATURES

- "Stored energy" for smooth, rapid starts and positive picking.
- Precision braking.
- Minimum fluctuations of speed and motor current.
- Lower power consumption.
- Lower motor heat losses.
- Eliminates current regeneration.
- Simplicity and ease of maintenance.

. . . all of which adds up to increased mill production, improved quality of cloth, lowered operating costs and long, trouble-free service.

We will welcome an opportunity to tell you—without obligation—how the Diehl Power Transmitter can bring these benefits to you.



This cutaway view illustrates the inverted construction of the power transmitter and shows the rotor which revolves around the outside of the stator on a hollow shaft—providing the essential inertia without the disadvantages of a separate fly wheel. Note the pinion driving shaft with attached clutch-plate which is shifted axially by simple lever at front end of motor, regulating clutch engagement pressure and providing controlled driving and braking action.

Visit us at Booth No. 429 at the
THE PRODUCTION ENGINEERING SHOW
(the Automation Exposition)
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Du Pont developments in High-Temperature Dyeing bring you outstanding fastness, economy!

The hydrophobic properties of the new synthetic fibers created great problems for the dyeing industry. Dyers found that with fibers such as "Orlon" acrylic fiber and "Dacron" polyester fiber, duplication was often impossible... fastness standards were sometimes barely acceptable... methods proved much too costly.

One method for dyeing these hydrophobic fibers at elevated temperatures was developed by Du Pont technicians in their laboratory to help overcome these problems. But the proof of this new method had to be made in commercial dyeings. One of the early conversions to high-temperature dyeing of stock was made at the Fred Whitaker Company, where these pictures were taken. The method proved successful, not only for dyeing hydrophobic fibers, but also for wool — both in stock and yarn form.

• No matter what type of fiber you are dyeing, this new high-temperature stock-dyeing method may save you time and money, too. Du Pont will be glad to help you determine how you can adapt this method to your dyeing, or to give you specific information on the proper procedure in dyeing your fibers by this method. Get in touch with your Du Pont representative or write to: E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.

Du Pont Dyes

Improved results with high-temperature stock dyeing:

for **NYLON**

—the dye penetrates more quickly into the fiber, giving higher light fastness and wet fastness for the colors.

for **"DACRON"** *

— a carrier for the dye is no longer necessary, with better light fastness resulting.

for **"ORLON"** †

— dyeing time is shortened considerably, using either the cuprous ion method, or the new "SEVRON"‡ dyes which Du Pont engineered specifically for "Orlon."

for **WOOL**

— dyeing and chroming time is reduced greatly.

* "DACRON" is Du Pont's registered trade-mark for its polyester fiber.
† "ORLON" is Du Pont's registered trade-mark for its acrylic fiber.
‡ Reg U. S. Pat. Off.

DU PONT
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Better Things for Better Living . . . *through Chemistry*

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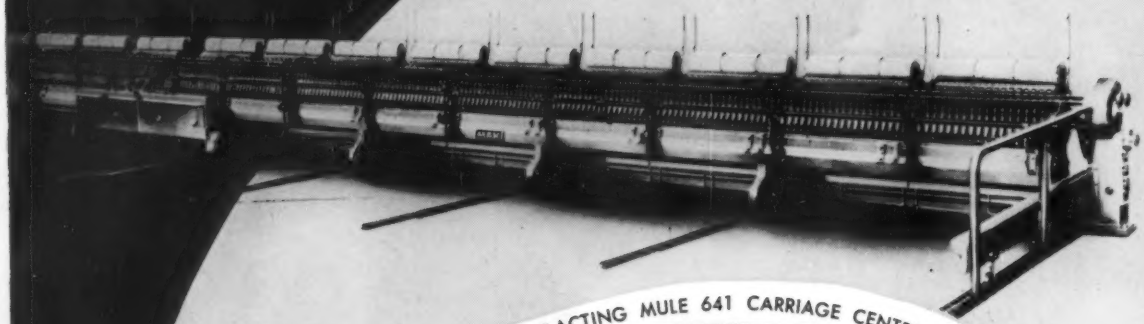
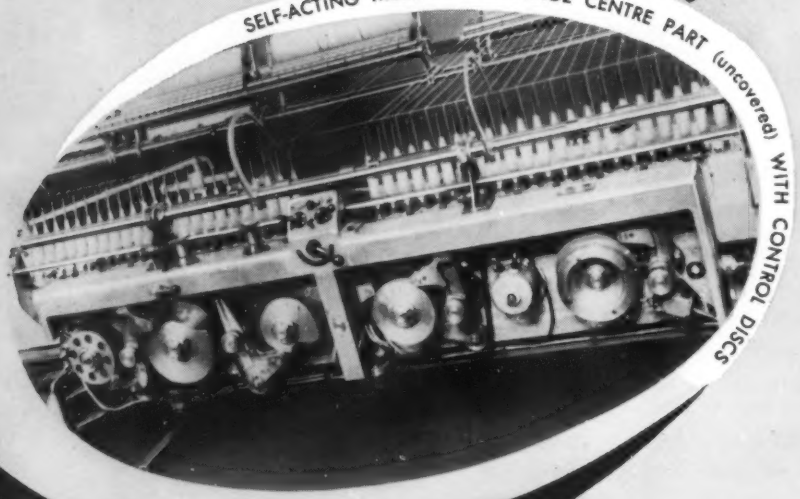
SPINNING MACHINES

•

Carding Sets
Self-Acting Mules
Ring Spinning
Frames





SELF-ACTING MULE 641 CARRIAGE CENTRE PART (uncovered) WITH CONTROL DISCS

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Sonoco SINGLE HEAD SPOOLS for Industrial Thread

Standard Sizes for Single Head Thread Spools are as follows:

Base Diameter	— 2½"	Barrel Lengths	— 2⅝"
" "	— 2¾"	" "	— 4-3/16"
" "	— 3"	" "	— 5⅜"
" "	— 3¼"		
" "	— 3½"		
" "	— 3¾"		
" "	— 4"		

3½" and 4" base spools also available with barrel lengths 6⅜" long. Double head spools can be supplied to meet your requirements.

standard of the world!

A SONOCO development widely accepted by the industry for packaging industrial thread. The tapered base permits free delivery without "snagging" during "take off," and uniform tension to sewing machine. Choice of regular or velvet surface. Ground ring or deep score on barrel optional. Can be supplied with metal ring in barrel, printed barrel, and plain or sulphur-dipped base. Colored lacquer tips may be ordered for identification. Consult your SONOCO sales-engineer or write us direct.

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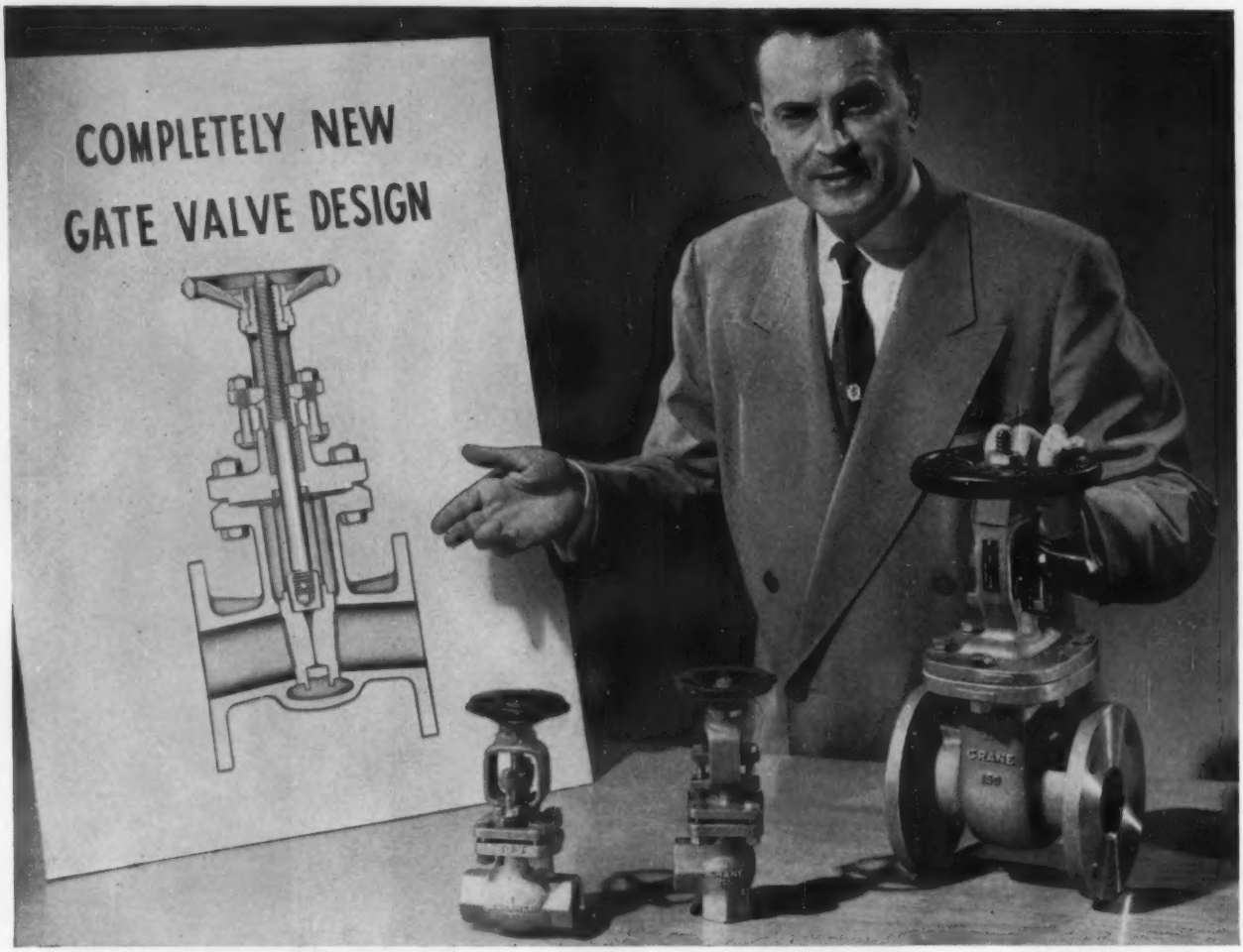


New CRANE Corrosion-resistant valves in 18-8 SMo and Craneloy 20

Gate, Globe, Angle and Check Patterns

Few valves for process industries have ever received the quality treatment given this new Crane line—at prices you'll find O.K.

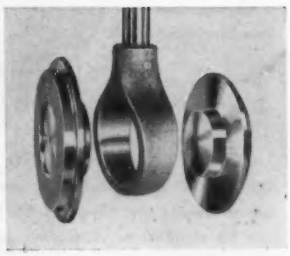
Note, for instance, the unique yet simple split-wedge disc construction in the gate valves. Those dual identical discs are free to rotate in their holder—the most effective design for resisting galling. The trunnion shape at the back of each disc assures even distribution of closing forces. You couldn't buckle them if you tried.

The globe and angle valves give equally outstanding control of corrosive fluids. A new type disc-stem connection, with minimum clearances, practically eliminates vibration. By placing seating load closer to seats, it provides easier, more accurate closure.

Check valves feature compact, thoroughly proved, non-slamming design.

Throughout, these valves are built for better service in your choice of Crane 18-8 SMo Stainless Steel or Craneloy 20. Both lines come with screwed or flanged ends.

ASK FOR THIS CATALOG—Full information including service suggestions given in circular AD-2080—available from your Crane Representative or by mail. Crane Co., General Offices: Chicago 5, Ill. Branches and Wholesalers everywhere.



New split-wedge disc in gate valves combines the benefits of free rotation with uniform seat load pressure.

CRANE CO.

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KITCHENS · PLUMBING · HEATING

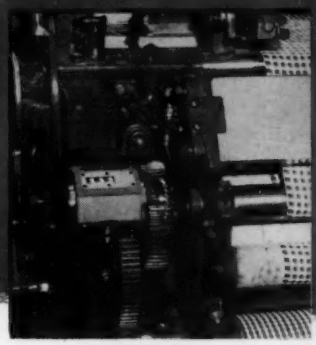
CRANE'S FIRST CENTURY...1855-1955

THIS COMPLETE VEEDER-ROOT "Countrol Package"

gives you AUTOMATIC UNIFORMITY all through your Mill . . . with New VEEDER-ROOT COUNTERS

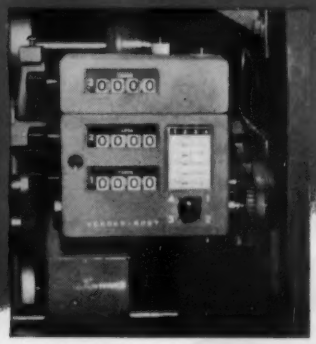
. . . on Looms | **. . . on Frames**

2-3-4 Pick Counter on Loom



Cut Meter on Loom

2-3-4 Hank Counter and Predetermining Counter on Drawing Frame



2-3-4 Yardage Counter and Predetermining Counter on Spinning Frame

On looms, 2-3-4 Pick Counters keep accurate production records and provide a basis for wage payment . . . while Cut Meters help maintain uniformity of cut-lengths of cloth, which is insisted upon today by the cutting-up trades.

On frames and other preparatory equipment, Hank, Yardage and Predetermining Counters hold can-variation to the minimum . . . and make it possible to run the largest economical packages.

This complete Veeder-Root "*Count*rol Package" adds up to better, automatic uniformity all through the mill. And that's why it pays *any* mill to get this Package of new and modern Veeder-Root Counters, when modernizing present machinery or buying new. Get in touch with the nearest Veeder-Root office *today*.

VEEDER-ROOT
INCORPORATED
"The Name that Counts"

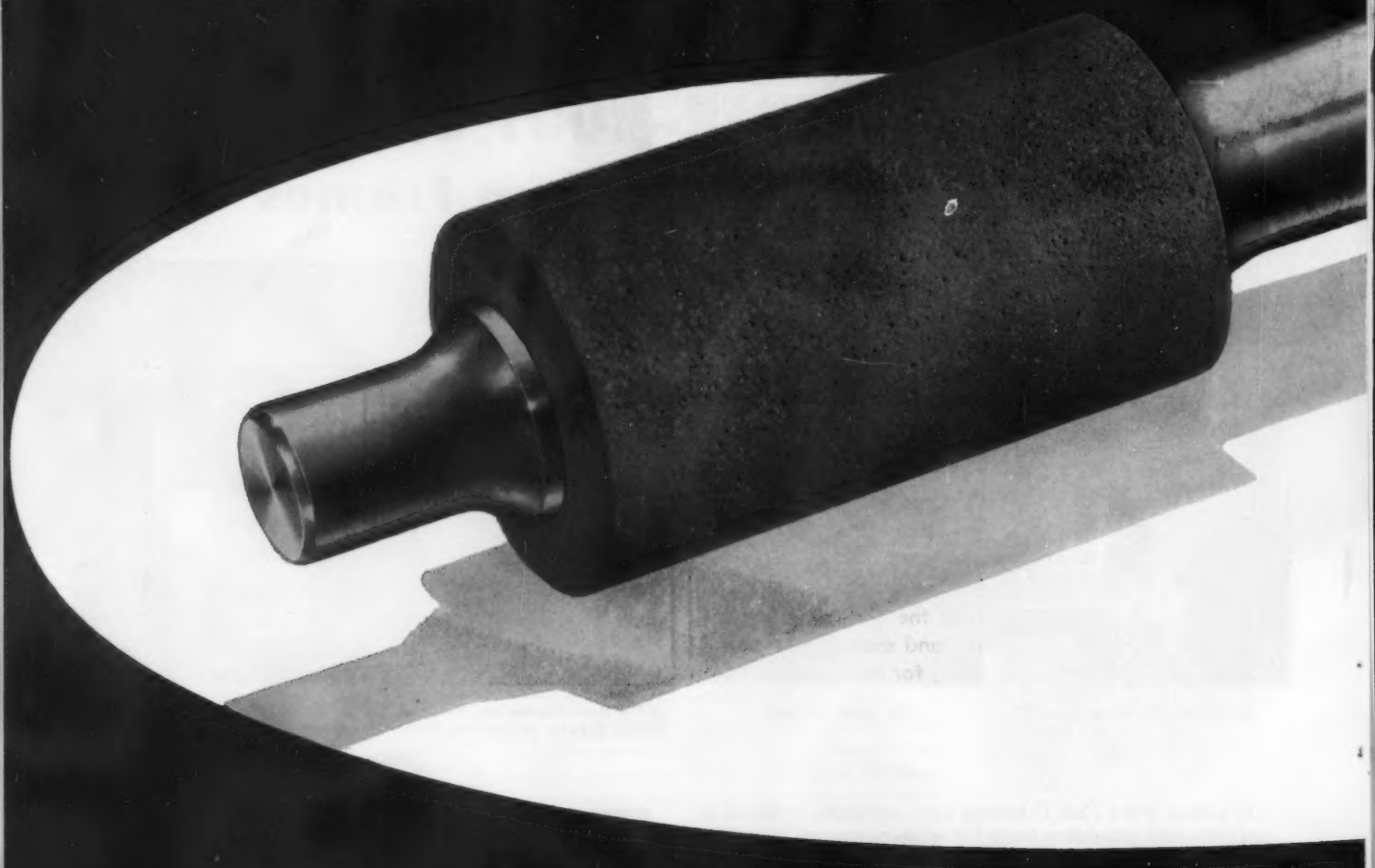
HARTFORD 2, CONN. • GREENVILLE, S. C.

Chicago 6, Ill. • New York 19, N. Y.
Montreal 2, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

Announcing the All New Cot

Dayco EW-540

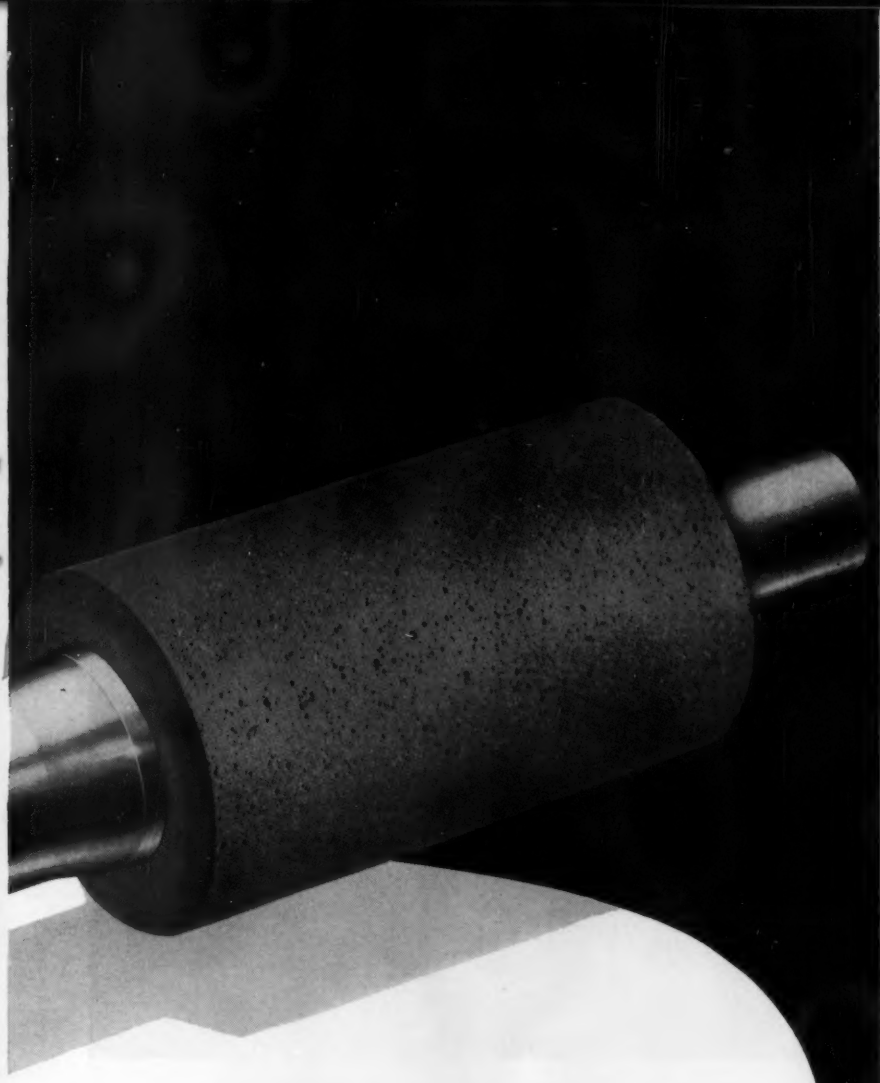
Here's news about the most important advancement in cot performance in the last decade!



Won't glaze or slicken—reduces buffing to a minimum!

Made with thousands of microscopic cells which are opened up by the continuous traversing of the yarn, Daycos *stay dry*—never become glazed or slick. This means fewer buffings, longer runs between buffings. For all the money-saving facts request your copy of the new Dayco EW-540 data sheet.

Dayton Rubber Co., Textile Division, Dept. 305,
401 S. C. Nat'l. Bank Bldg., Greenville, S. C.



Amazing, New Micro-Porous Surface RENEWS itself!

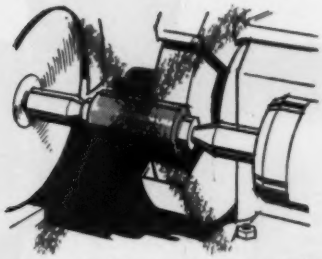
Exclusive with Dayco EW-540 Cots is a cellular structure which *renews* itself continuously through the normal process of wear. This constant porosity relieves surface tension—the major cause of lap-ups and ends down—for the life of the cot. This means big savings in time and money, as well as increased production, for mill operators everywhere.

GOLDEN JUBILEE

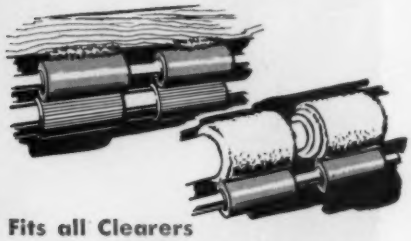
Dayton Rubber 50 YEARS OF PROGRESS

Dayco and Dayton Thorobred Textile Products for Better Spinning and Weaving

Only Dayco EW-540 Cots have all these features:

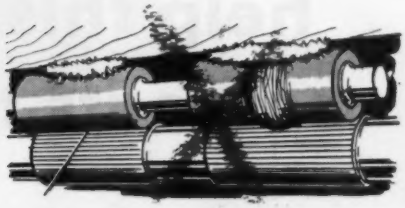


Runs 2 to 3 times longer without buffing—Tested under actual mill conditions these sensational Dayco EW-540 cots have been in operation for over 2½ years. During that period *not one test cot has ever required buffing*. Important, too, Daycos will not lap even in 65 to 70% humidity—nor will they pick up oils or cotton residue.



Fits all Clearers

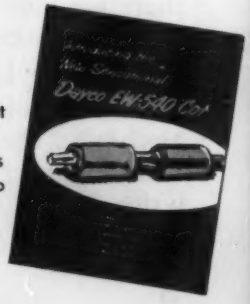
New Daycos are effective general purpose cots and work to perfection with either flat or revolving clearers. Superior, in every respect, to any other cot on the market, Daycos have proved their ability to keep eyebrowing to the absolute minimum.



Prevent Lap-Ups and Excessive Ends Down— Because Dayco cellular porosity relieves surface tension, lap-ups are virtually eliminated. Ends down are guided directly to the waste roll and are prevented from becoming entangled in other strands which would cause more ends down to occur.

Get the Facts

No mill superintendent can afford to be without the complete facts on the amazing Dayco EW-540 Cots. Send for your copy of Fact Sheet TODAY!



© D.R. 1955

17 instruments like these...

help this famous Southern mill solve its toughest dye problems

PROBABLY one of the toughest problems confronting the textile industry today is the successful dyeing of synthetics. At the well-known Southern mill pictured above they rely on Taylor FUL-FLEX* Time Cycle Controllers to time the whole operation precisely and control temperatures accurately. In addition there are nine smaller dyebecs equipped with Taylor FULSCOPE* Indicating Controllers.

There are at least 25 different ways in which Taylor controls can help cut costs and maintain quality in the Textile industry. Your Taylor Field Engineer can advise you or, if you prefer, write direct to Taylor Instrument Companies, Rochester, N.Y., or Toronto, Canada.

Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.

*Trade Mark

Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

Satisfaction rests on the carton

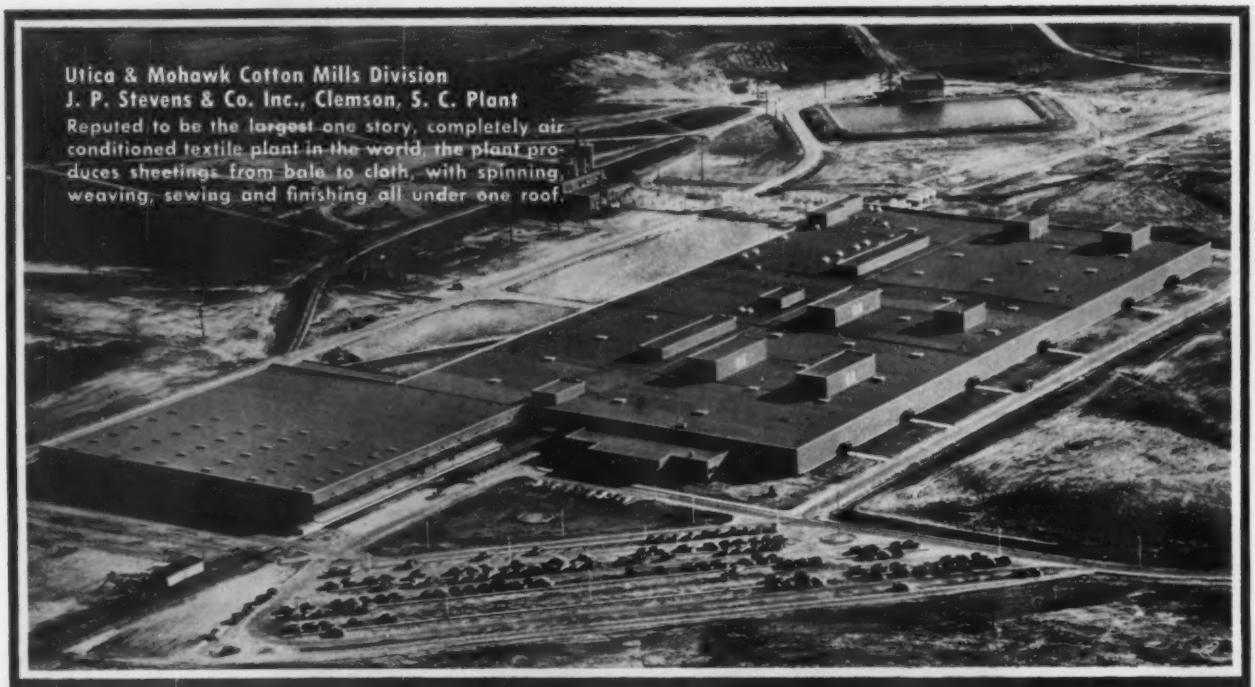
Johnson & Johnson sells the same quality that shippers look for in Union Corrugated Containers—protection. Union boxes are strong and dependable. They are where you want them, when you want them. Consider this definite evidence of Union superiority: More than half the major users of shipping containers who maintain their own package testing laboratories are satisfied Union customers.

TRADE MARK UNION
INTEGRATED PLANNING
INTEGRATED PRODUCTION

UNION BAG & PAPER CORPORATION

CORRUGATED CONTAINER DIVISION • Box Plants: Savannah, Ga., Trenton, N. J., Chicago, Ill.

Eastern Division Sales Offices: 1400 E. State St., Trenton 9, N. J. • Southern Division Sales Offices: P.O. Box 570, Savannah, Ga.
Western Division Sales Offices: 4545 West Palmer, Chicago 39, Ill. • Executive Offices: Woolworth Bldg., New York 7, N. Y.



Utica & Mohawk Cotton Mills Division
J. P. Stevens & Co. Inc., Clemson, S. C. Plant
Reputed to be the largest one story, completely air conditioned textile plant in the world, the plant produces sheetings from bale to cloth, with spinning, weaving, sewing and finishing all under one roof.

LOCKWOOD GREENE PROJECTS IN . . . . .

COTTON

Lockwood Greene's work, originating in 1832, was the design of cotton mills. In the field of cotton textiles, Lockwood Greene has had over 2,400 engagements, and has designed projects totaling almost a half billion dollars in value.

Continuous management services from site selection to plant completion

LOCKWOOD GREENE
ARCHITECTS — ENGINEERS

BOSTON 9, MASS. 40 Central Street — NEW YORK 17, N. Y. 41 East 42nd Street — SPARTANBURG, S. C. Montgomery Building

OVER A CENTURY OF INDUSTRIAL PLANT EXPERIENCE

BROCHURE AVAILABLE UPON REQUEST

Cone Mills Corporation
San Marcos, Texas
A 1955-6 construction project — a $10,000,000. denim plant, 1 story, windowless type — 600,000 sq. ft. floor area with 42,000 spindles, 1,080 looms and employment for 1,000 persons. Annual production estimated at 25 million yards of denim from 72,000 bales of cotton.

PERFORMANCE without parallel

High Drafts

Yarn Quality

Flexibility

Economy

. . . the result of 25 years' experience with TWO-APRON DRAFTING

There's no "magic" involved in the success of the Whitin Two-Apron System. Its operation in thousands of mills has proven its value and has led to its recognition everywhere in the textile industry as the finest drafting system in the world.

In use on more than 11,000,000 spindles.

Whitin

MACHINE WORKS

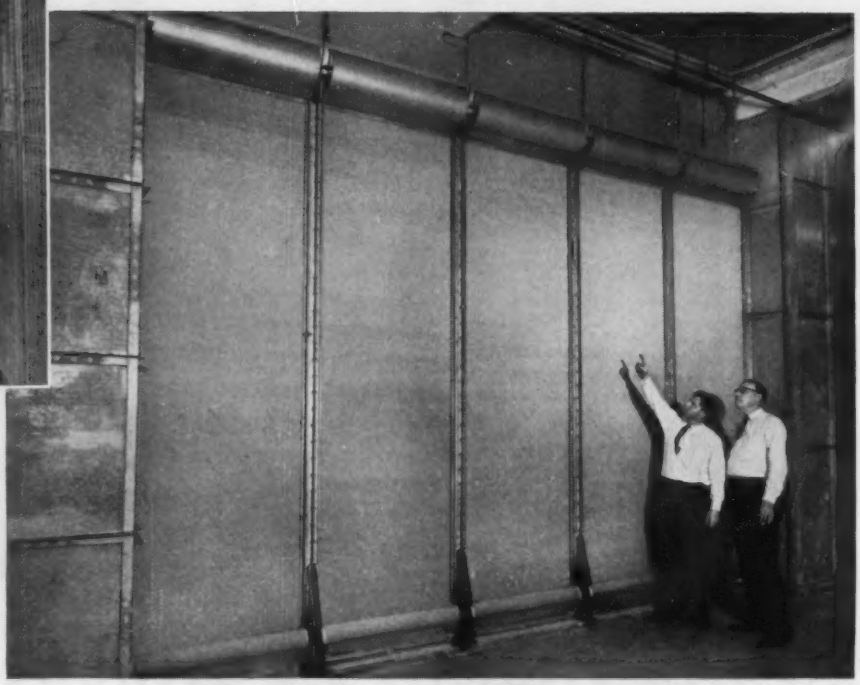
Whitinsville • Massachusetts

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

AAF FILTER TEAM CLEANS UP A *Dirty Story*

ABOVE: Final cleaning operations are handled by AAF ELECTRO-MATIC electronic precipitators, thus assuring the spinning room of *super-clean* air.

RIGHT: The front line against impurities in 86,000 cfm of outdoor and re-circulated air to the spinning room is held down by a bank of AUTO-AIRMAT filters. AUTO-AIRMATs on another system supply 60,000 cfm of clean air to the carding room.



Engineered and designed by J. E. SIRRINE & CO., Greenville, S. C.
Installed by THE BAHNSON COMPANY, Winston-Salem, N. C.

Johnston Manufacturing Eliminates Discoloration Losses with Auto-AIRMAT | *Electro*-MATIC Installation

YARN discoloration from dust and soot was costing Johnston Manufacturing Company, Charlotte, N. C., thousands of dollars yearly. Then AAF's No. 1 textile team, consisting of AUTO-AIRMAT and ELECTRO-MATIC filters, took over cleaning both intake and re-circulated air for the spinning room.

Result: during the first year of operation, *not one cent* has been lost due to discoloration.

Here's how these two filters complement each other in producing super-clean air. Lint and coarser dust particles are collected by the AUTO-AIRMAT. Then the ELECTRO-MATIC electronic precipitator adds the finishing touches with the removal of microscopic impurities and smoke. The maintenance story is just as good as the efficiency story—each unit cleans both the air *and itself* automatically!

For complete information on these two filters, call your local American Air Filter representative, or write direct for AUTO-AIRMAT Bulletin No. 234 and ELECTRO-MATIC Bulletin No. 250.

AAF herman nelson

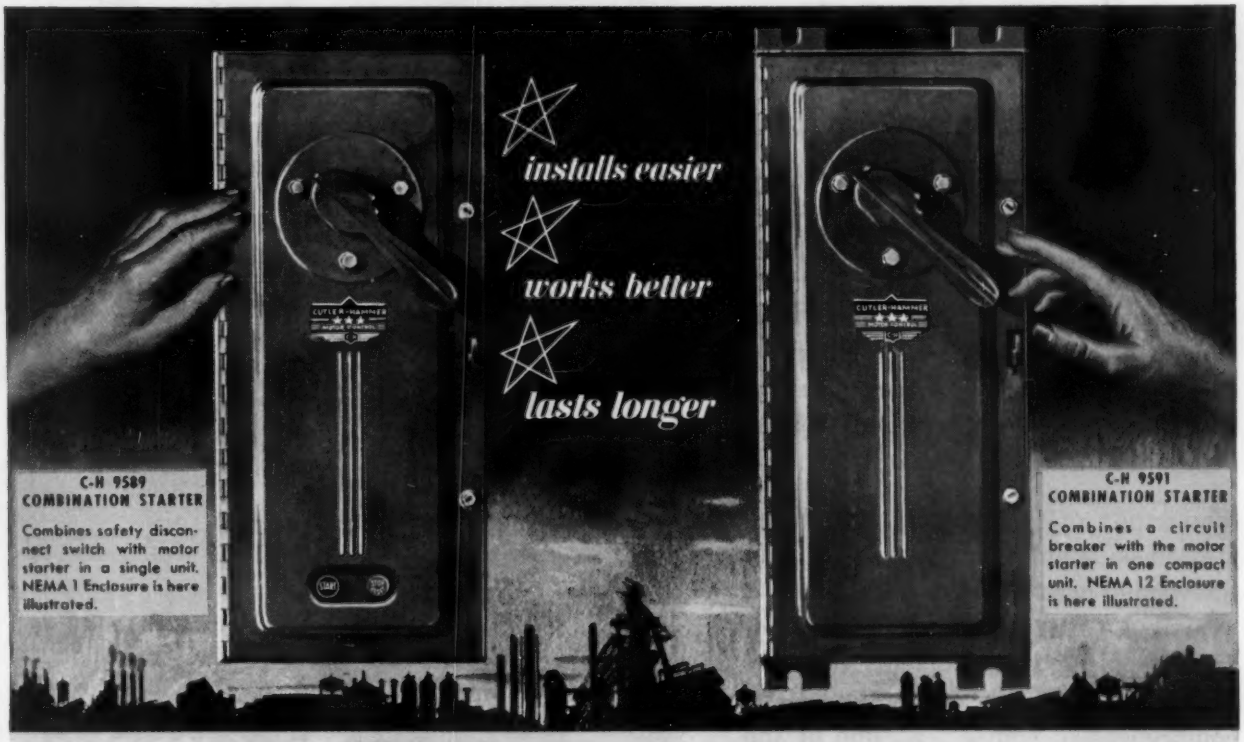
American Air Filter
COMPANY, INC.

American Air Filter of Canada, Ltd., Montreal, P. Q. • 304 Central Avenue, Louisville 8, Kentucky

For more information, write direct or use Reader-Service post card.

WHAT'S NEW IN MOTOR CONTROL? ★ ★ ★ GET IT FIRST IN CUTLER-HAMMER

New Combination Starters in the Spectacular Line of Cutler-Hammer ★★★ Motor Control

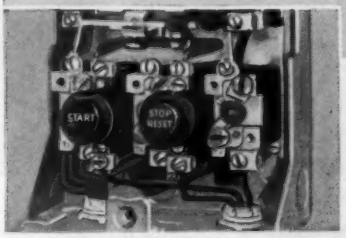

installs easier
works better
lasts longer
C-H 9589
COMBINATION STARTER
Combines safety disconnect switch with motor starter in a single unit. NEMA 1 Enclosure is here illustrated.
C-H 9591
COMBINATION STARTER
Combines a circuit breaker with the motor starter in one compact unit. NEMA 12 Enclosure is here illustrated.

Users have had many dramatic proofs of the advantages built into Cutler-Hammer ★ ★ ★ Motor Control. They *know* the three silver stars on the Cutler-Hammer nameplate identify control equipment that sets three entirely new standards of motor control performance and value. Star #1: Amazing savings in installation costs which often exceed the cost of the control. Star #2: Performance so uniform and dependable that *this* control often saves many times its cost by the production interruptions it avoids. Star #3: Life so greatly increased that this control *never* requires maintenance expense in 90% of its uses.

Now combination starters are available in this spectacular new line of Cutler-Hammer ★ ★ ★ Motor Control. Your nearby Cutler-Hammer Authorized Distributor has been stocked and is ready to serve you. Bulletin 9589 Starters incorporate a rugged disconnect switch of advanced design with or without fuses. Bulletin 9591 Starters are equipped with circuit breakers. Order *now* for prompt delivery.

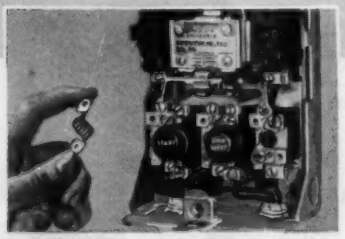
CUTLER-HAMMER, Inc., 1457 St. Paul Avenue, Milwaukee 1, Wisconsin.

CUTLER-HAMMER
★ ★ ★
MOTOR CONTROL
C-H



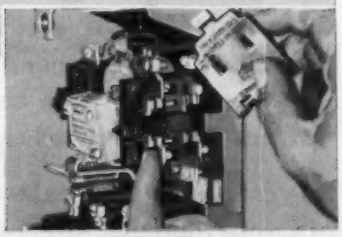
Full Three-Phase Protection

Only *three* overload relays can give complete three-phase protection to avoid motor burn-outs and their costly interruptions to production. And *only* Cutler-Hammer offers this complete three-phase protection in standard combination starters. You pay only for the third relay, nothing extra for special engineering or special enclosures.



Adjustable Load Sensing Coils

The accurate adjustment of overload protection permits motors to work harder without damage to motor windings. This is more important than ever with the newer type small frame motors. Adjustable load sensing coils in these new starters provide 3% loading accuracy instead of the 10% to 12% accuracy in competitive control.



Superlife Vertical Contacts

Experienced control users insist on dust-safe vertical contacts. And now the famous Cutler-Hammer vertical contacts have been doubly improved. First, their new lightweight design cuts bounce to reduce arcing. Second, any arcing that might occur is now pressure-quenched. Compare performance and see the difference.

For more information, write direct or use Reader-Service post card.

Practical service training at Honeywell's school . . .

makes your instrument men more valuable

Your instrument maintenance men can get a real education in the most up-to-date methods for servicing instruments, at Honeywell's Training School. Any organization which uses Honeywell instruments can send maintenance personnel to this school. Tuition costs you nothing, for this school is maintained as a "plus-value" service to Honeywell customers.

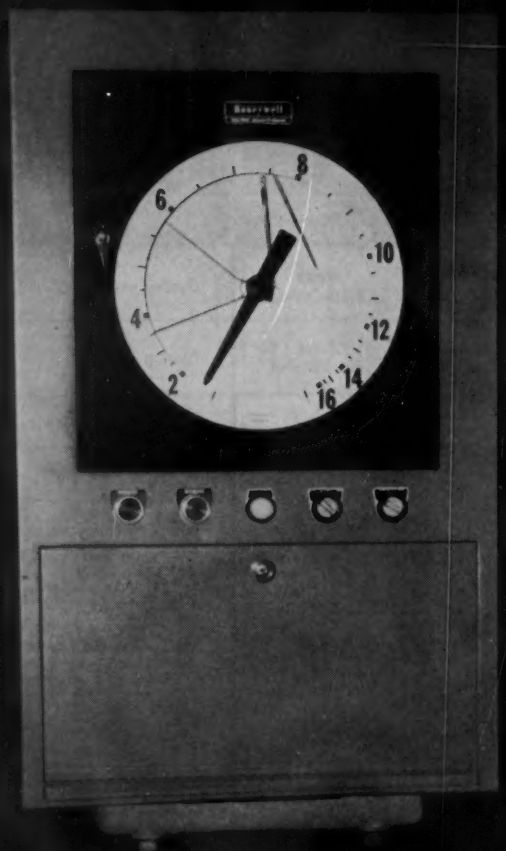
Thousands of technicians have either started or augmented their instrument knowledge here. A variety of courses is available, to fit men for the particular kind of maintenance problems they may encounter in their specific jobs. The comprehensive course . . . one of the most complete and intensive offered anywhere . . . covers about thirteen weeks. Other courses cover five weeks and less, to offer condensed instruction of either a basic or "refresher" nature to men who can't be spared for extended periods.

There's nothing academic about this school. The emphasis is placed on practical knowledge. Theory through lectures and textbook study is liberally supplemented by laboratory sessions and actual bench work on all types of instruments and related equipment.

One caution: classes have to be limited to assure thorough attention to all students, so make reservations in advance. Your local Honeywell office will be glad to make arrangements. Call today . . . it's as near as your phone.

Improved *Moist-O-Graph* is now simpler, more accurate

For full technical data on the ***Moist-O-Graph****, write for your copy of Bulletin No. 9306, "Instrumentation for Slasher Room Processes."*



than ever

READS REGAIN DIRECTLY—CONTROLS AUTOMATICALLY.

The latest improvements in the ***Moist-O-Graph*** *can help you control the slashing operation at optimum conditions. Wet or over-dried warp is eliminated . . . weavability improved.*

THE *latest advances in the electronic* ***Moist-O-Graph®*** bring even greater refinements in sensitivity, accuracy and simplicity to the control of warp regain. A new design, embodying the most modern engineering techniques, gives you these added features:

Fewer moving parts. Simplified construction makes the instrument circuit integral with the measuring circuit . . . eliminates many mechanical components. The new system is all-electronic. It's easier to maintain, and requires less spare parts stock.

Improved control. The new circuit gives closer overall control performance . . . holds regain within narrow limits. It incorporates an automatic means for holding at the set point during creeps, stops or shutdowns.

Easy calibration. Checks of calibration can be made quickly with a conveniently located switch.

The *Moist-O-Graph* takes the guesswork out of regain control. It reads regain directly for most fibers, blends or sizes. A turn of a dial calibrates it for the warp you are running. In scores of mills, it has proved its ability to step up production and quality in the slasher room, and to increase weaving room efficiency.

For details of how this improved instrumentation can go to work in your mill, call your local Honeywell sales engineer . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.—in Canada, Toronto 17, Ontario.

● **REFERENCE DATA:** Write for *Moist-O-Graph* Bulletin.

MINNEAPOLIS
Honeywell
BROWN INSTRUMENTS
First in Controls

CHEMICAL USERS' GUIDE To General Chemical Products for the Textile Industry

PRODUCT	AVAILABLE FORMS	COMMERCIAL STRENGTH (MIN.)	SHIPPING CONTAINERS	APPLICATIONS
Glauber's Salt, Crystal $Na_2SO_4 \cdot 10H_2O$	Colorless Crystals	96% $Na_2SO_4 \cdot 10H_2O$ 42.3% Na_2SO_4	Bags Fibre Drums	Dyeing assistant.
Glauber's Salt, Anhydrous Na_2SO_4	White Granules	99.9% Na_2SO_4	Bags Fibre Drums	Dyeing assistant.
Sulfuric Acid H_2SO_4	Liquid	66° Be 93.19% H_2SO_4	Carboys Steel Drums Tank Trucks Tank Cars	Carbonizing wool; dyeing; desizing cotton; souring; rayon spinning bath.
Acetic Acid CH_3COOH + water	Colorless Liquid	Various	Carboys Barrels Tank Cars Drums	Dye bath; souring agent; imparting scroop to cotton and silk.
Aqua Ammonia NH_4OH + water *(Ammonia)*	Colorless Liquid	26° Be 29.4% NH_3	Carboys Steel Drums	Wool scouring; dyeing.
Hydrochloric Acid HCl + water *(Muriatic Acid)*	Liquid	18° Be (27.92%) 20° Be (31.45%) 22° Be (35.21%)	Carboys Tank Cars Tank Trucks	Souring; removing hypochlorite bleach; dyeing.
Tetrasodium Pyrophosphate, Anhydrous $Na_4P_2O_7$ *(TSPP) (Pyro)*	White Powder	98% $Na_4P_2O_7$ (Equiv. 52% P_2O_5)	Fibre Drums Bags	Stabilizing peroxide bleaches; water treatment and dispersing agent; detergent.
Sodium Tripolyphosphate $Na_5P_3O_{10}$ *(Tripoly)*	White Powder	90-95% $Na_5P_3O_{10}$ (Total P_2O_5—56%)	Bags	Water treatment and dispersing agent; detergent.
Sodium Metasilicate $Na_2SiO_3 \cdot 5H_2O$	White Granules	29.0% Na_2O	Bags Fibre Drums	Kier boiling as detergent.
Sodium Sulfite, Anhydrous Na_2SO_3 *(Sulfite)*	White Powder	98.5% Na_2SO_3	Bags Fibre Drums	Rayon manufacturing
Sodium Bisulfite, Anhydrous $Na_2S_2O_5$ *(ABS) (Sodium Metabisulfite)*	White Powder	97.5% $Na_2S_2O_5$ (Equiv. 65.5% SO_2)	Bags Fibre Drums	Bleaching wool; anti-chlor after bleaching with hypochlorite; rayon manufacturing.
Oxalic Acid $C_2H_2O_4 \cdot 2H_2O$	Colorless Crystals	99.5% $C_2H_2O_4 \cdot 2H_2O$	Bags Fibre Drums	Bleaching; dyeing for mordanting wool with chrome.
Sodium Silicate $Na_2O \cdot X(SiO_2)$ + water	Viscous Liquid	38° to 52° Be Various ratios of $Na_2O:SiO_2$	Steel Drums Tank Trucks Tank Cars	Stabilizing peroxide bleaches.
Aluminum Chloride, Solution $AlCl_3$ + water	Liquid	32° Be 50% $AlCl_3 \cdot 6H_2O$	Carboys Tank Cars	Carbonizing wool.

The products advertised are commercial chemicals having various uses, some of which may be covered by patents, and the user must accept full responsibility for compliance therewith.

OTHER PRODUCTS: Disodium Phosphate; Nitre Cake; Trisodium Phosphate; Sodium Hyposulfite; Aluminum Sulfate; Lead Acetate; Mixed Acid; Epsom Salt; Chrome Alum; Ammonia Alum; Potash Alum; Ammonium Sulfate; Ferric Sulfate (Iron Copperas Nitrate); Ferric Nitrate (Iron True Nitrate).

FOR THE LABORATORY OR SPECIAL APPLICATIONS: BAKER & ADAMSON REAGENTS and FINE CHEMICALS

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

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In Wisconsin: General Chemical Company, Inc., Milwaukee, Wis.

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Allied Chemical

"You mean live fish?"

Exactly: Live fish. In water.
In a corrugated box.

A customer of ours uses this unique bag-in-a-box-in-a-box to ship live tropical fish all over the world. Says it's the most damage-proof and economical package he's used in 32 years as an aquariist.

Just goes to show you:
Nothing's impossible for H&D Package Engineers. Why not let 'em tackle your packaging problem?

HINDE & DAUCH

AUTHORITY ON PACKAGING • SANDUSKY, OHIO
13 FACTORIES • 40 SALES OFFICES

Automatic Winders for Rewound Filling

to take advantage of large package spinning, more yarn on filling bobbins, more uniform bunches, better weaving bobbins, and inspected yarn, all of which go to make a better fabric.

Abbott Traveling Spindle Package Winders

Automatic Cone or Tube Winders for warping, dyeing, twisting, quilling, sales.

Can be equipped with any one of a variety of slub catchers and inspection devices.

Production up to 1000 bobbins per hour per operator.

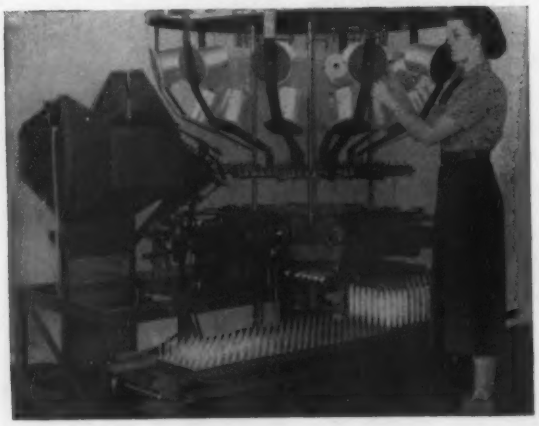
Abbott Traveling Spindle Automatic Quillers

For winding cotton, spun rayon, worsted, etc., equipped to doff automatically into baskets, or stack automatically into boxes.

For rewinding woolen yarn from mule and ring frames.

For winding filament rayon and nylon, etc., with automatic pinboard attachment or wide belt inspection conveyor.

Production up to 2000 bobbins per hour per operator.



Abbott Fully Automatic Radial Quiller

For smaller lots and widely diversified mills.

For winding cotton, spun rayon, filament rayon, worsted, wool, etc.

Can be arranged to deliver bobbins to Pinboard Attachment, or into baskets, or into wide belt conveyor.

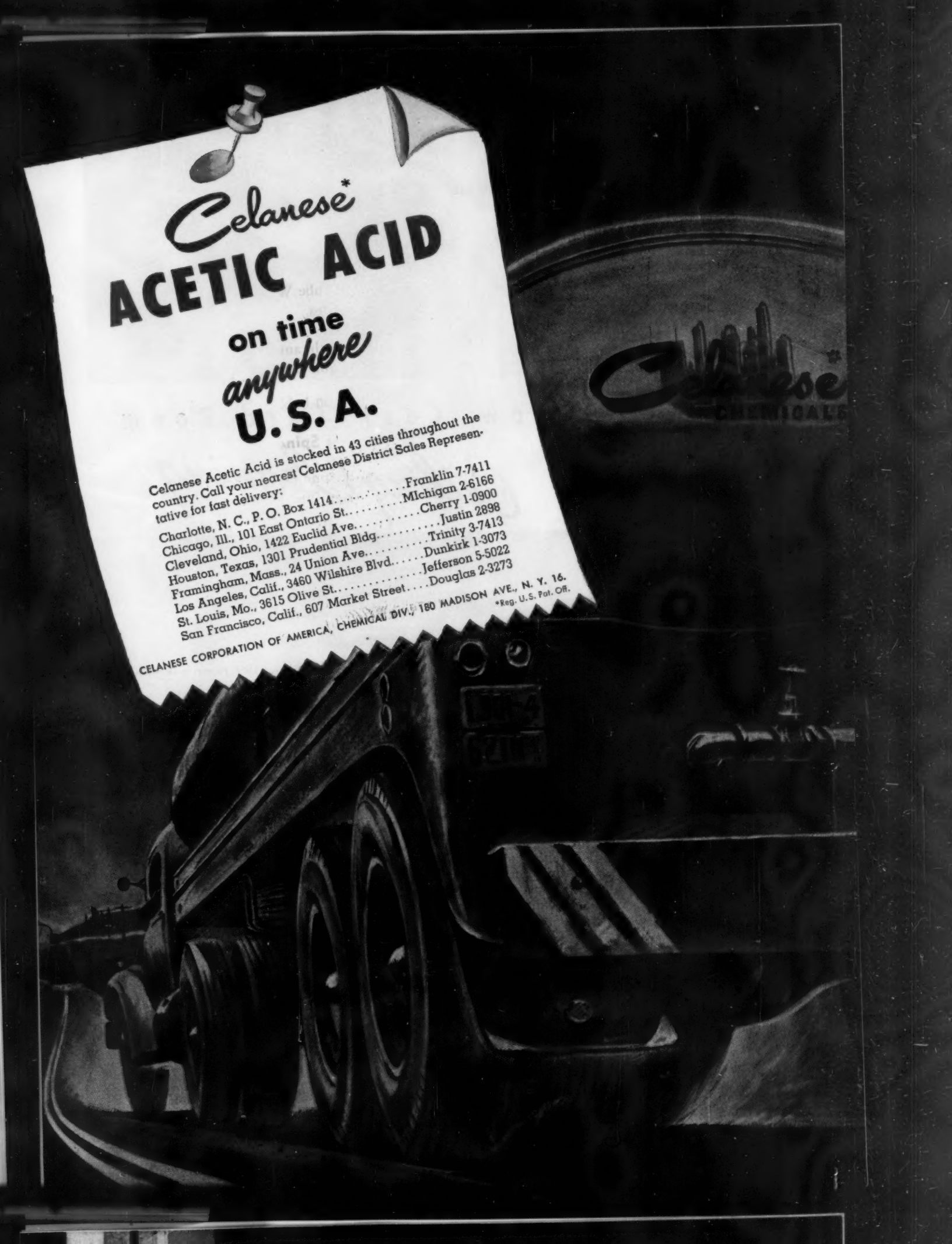
One operator can run several machines producing up to 2000 bobbins per hour per operator.

Can be equipped with measured yardage device for two-shuttle looms.

ABBOTT MACHINE CO., INC.

WILTON, NEW HAMPSHIRE

SOUTHERN SALES AND SERVICE: GREENVILLE, S. C.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ACETIC ACID
on time
anywhere
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Celanese Acetic Acid is stocked in 43 cities throughout the country. Call your nearest Celanese District Sales Representative for fast delivery:
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Chicago, Ill., 101 East Ontario St.....Michigan 2-6166
Cleveland, Ohio, 1422 Euclid Ave.....Cherry 1-0900
Houston, Texas, 1301 Prudential Bldg.....Justin 2898
Framingham, Mass., 24 Union Ave.....Trinity 3-7413
Los Angeles, Calif., 3460 Wilshire Blvd.....Dunkirk 1-3073
St. Louis, Mo., 3615 Olive St.....Jefferson 5-5022
San Francisco, Calif., 607 Market Street....Douglas 2-3273
CELANESE CORPORATION OF AMERICA, CHEMICAL DIV., 180 MADISON AVE., N. Y. 16.
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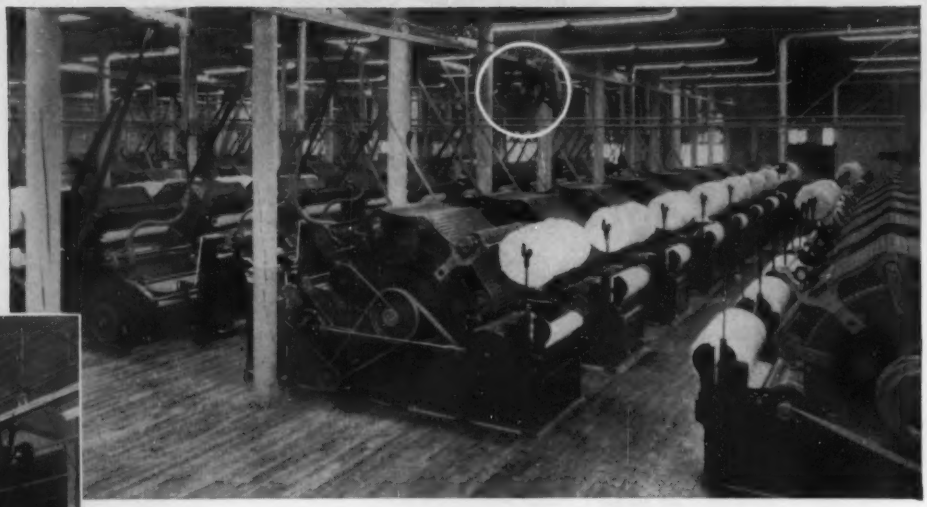
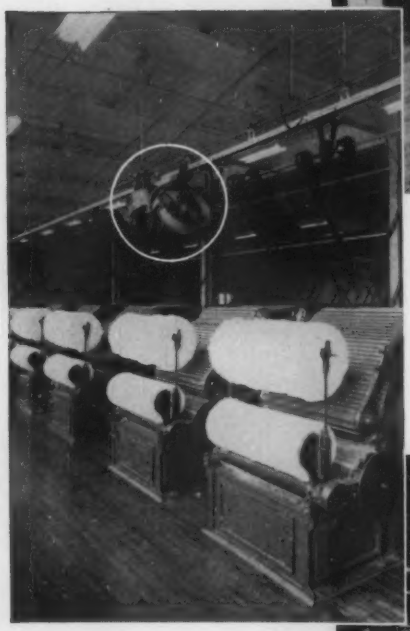
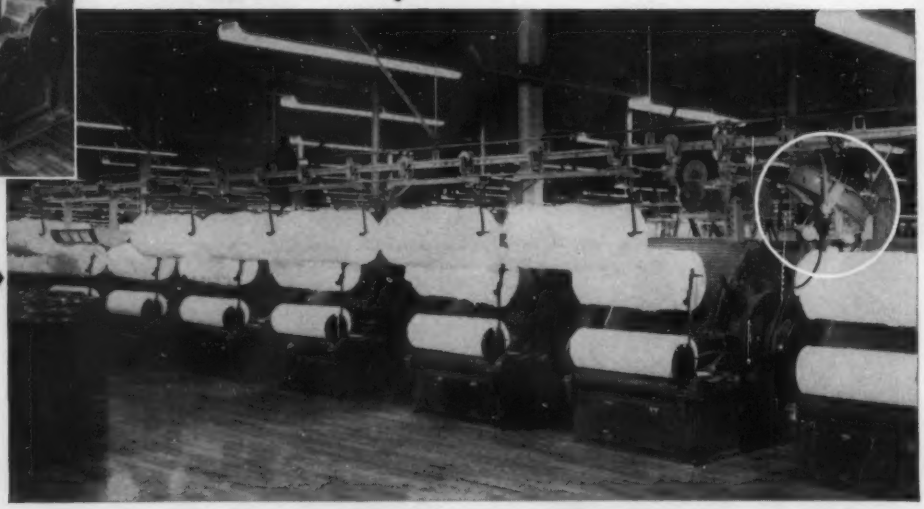
CHEMICALS





Low Cost Card Room *Ceiling Cleaning*



Cleans ceiling while transporting train of laps throughout card room.

It pays to clean *automatically!* American MonoRail Overhead Cleaning is most effective because it increases production and lowers cleaning costs and does a better job. Reports from mills using automatic overhead cleaners show they are definitely in favor of such a method. One mill reports elimination of blowing down every shift. Another, less slugs and elimination of former cost of manual overhead cleaning. All agree it pays to clean automatically with American MonoRail Overhead Cleaning.

AMERICAN OVERHEAD HANDLING EQUIPMENT

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G-E engineering services simplify textile-mill modernization

General Electric engineering specialists will help you modernize your plant. These specialists make sure that you get not only the right electrical equipment but also a planned modernization program. They can speed your purchasing . . . plan deliveries . . . combine latest products and techniques into efficient electrical systems . . . even develop new equipment, if necessary, to meet your special problems. That's why G-E engineering help in electrical modernization is your best equipment investment protection.

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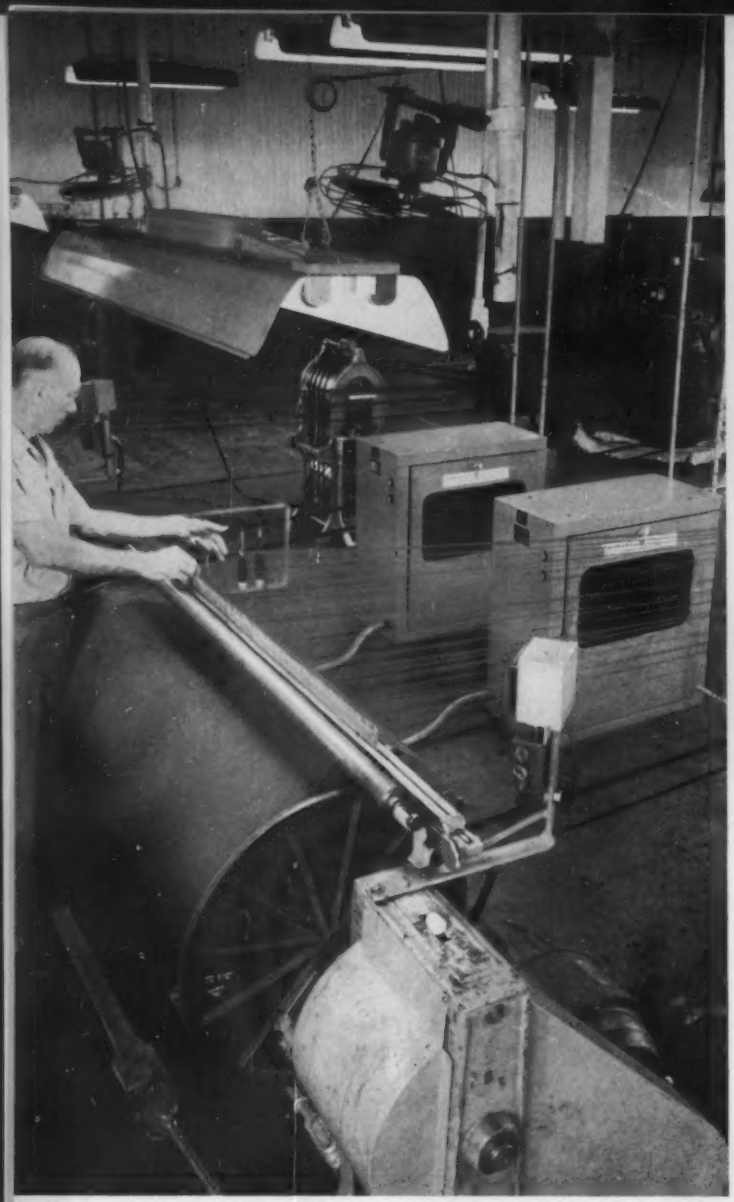
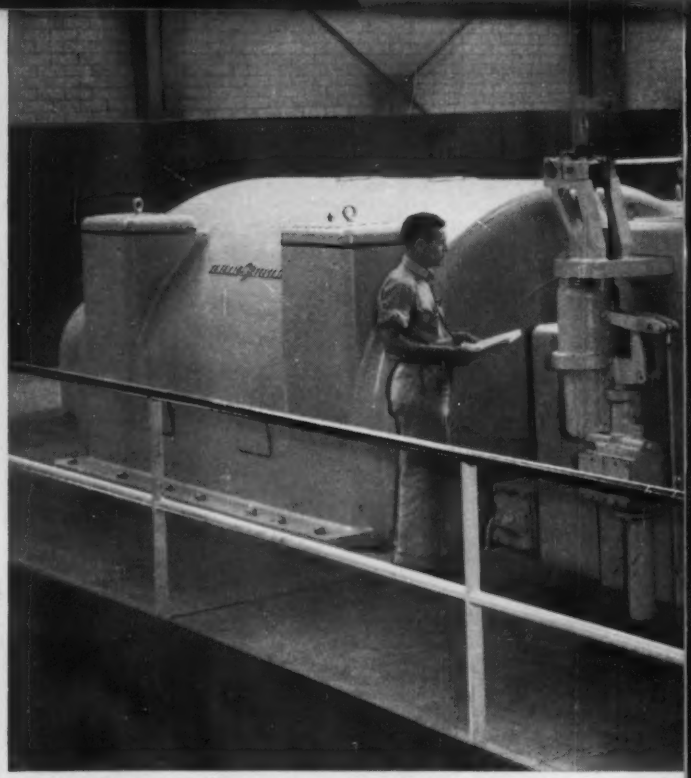
GENERAL ELECTRIC

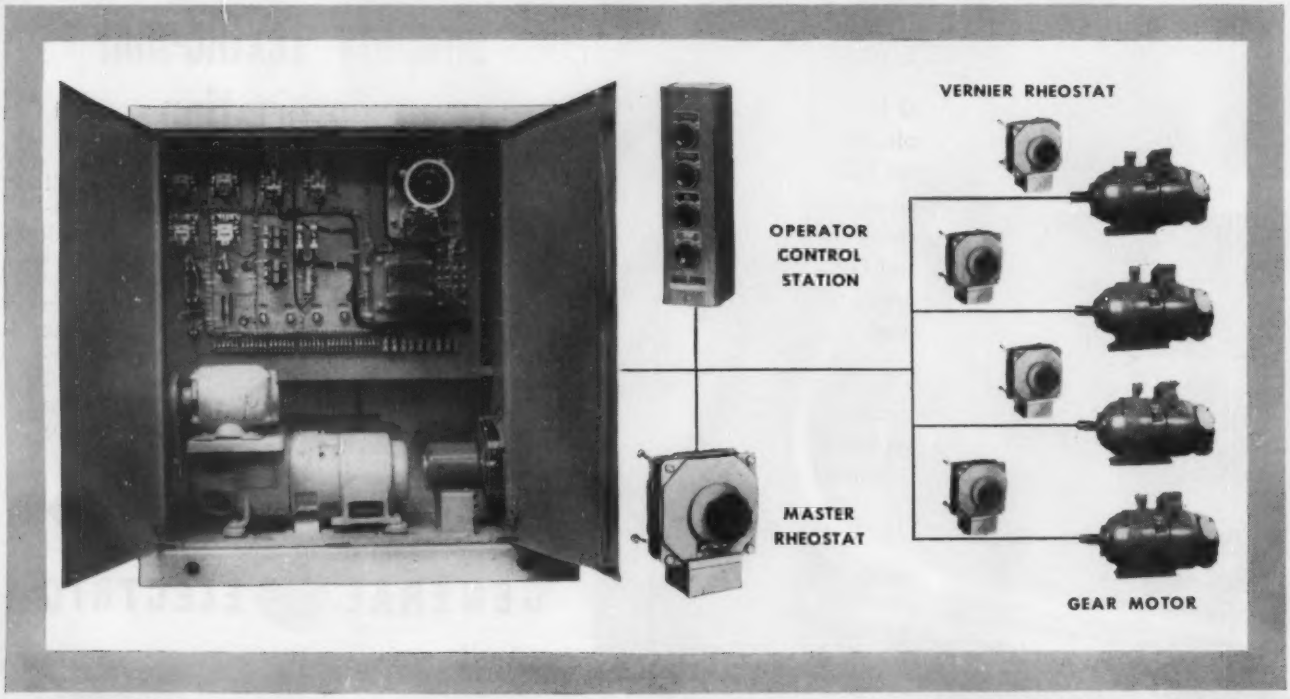




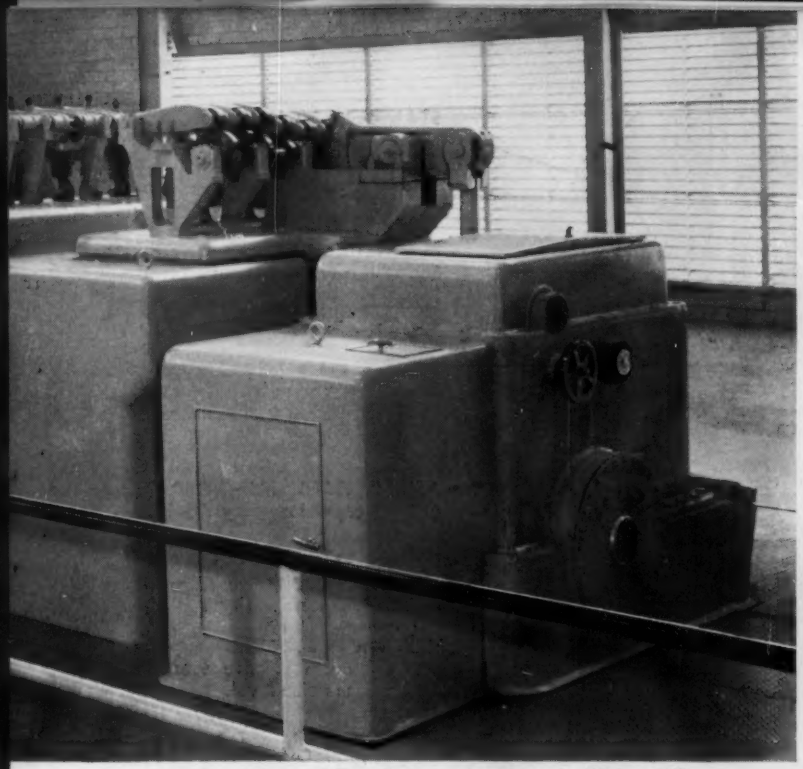
ECONOMICAL POWER GENERATION is possible with G-E steam turbine-generators. Steam becomes a by-product of

Flexibility of G-E helps textile mills

G-E SPEED VARIATOR provides integrated adjustable-speed drives from a-c power. Specialized forms drive finishing ranges, slashers, warpers, printing machines, etc.



SPEED VARIATOR power unit, operator's control station, rheostat, drive units can be installed almost anywhere to fit plant layout.



power and may be used for other process purposes. Many mills find it pays to use this economical prime mover.

drives and power systems increase production

CHANGING MARKET CONDITIONS demand that textile mills produce a wider variety of fabrics faster and more efficiently. With General Electric's help, many mills are modernizing electrically to improve their quality control and to compete more effectively in today's market.

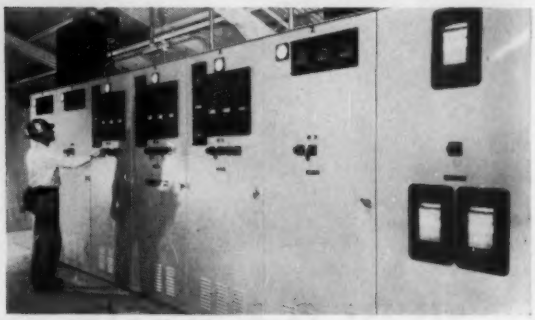
WHEN YOU MODERNIZE with G-E electrical equipment, you benefit many ways. For example, G-E power-system equipment is factory-assembled to cut installation time and cost. This equipment saves space, adapts readily into your existing systems and can be expanded easily and at low cost because of its "building-unit" design. And G-E drives are engineered to last longer, with less maintenance, in textile-mill service. These are important considerations in your plant modernization program.

FOR ELECTRICAL HELP on your mill-modernization program, be sure to contact your G-E Apparatus Sales representative early in the planning stage. General Electric Company, Schenectady 5, N. Y. 634-36

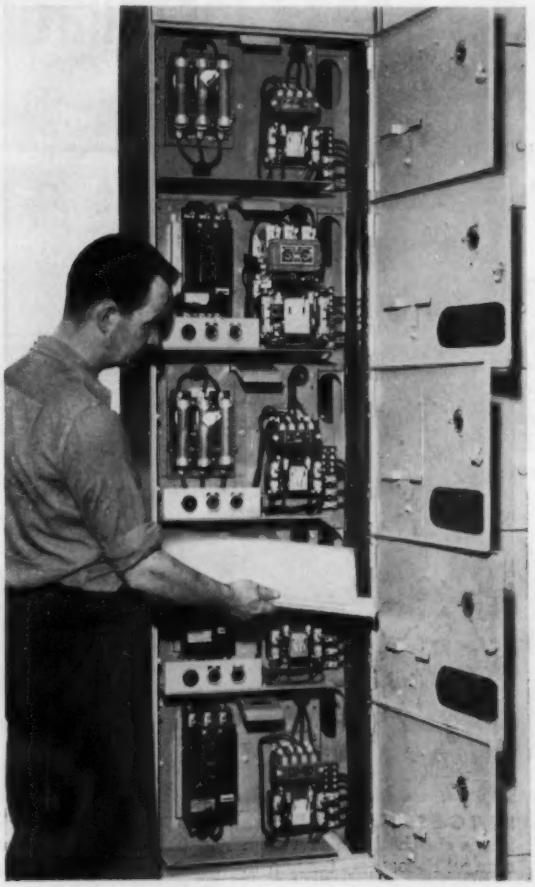
Engineered Electrical Systems for Textile Mills

GENERAL ELECTRIC

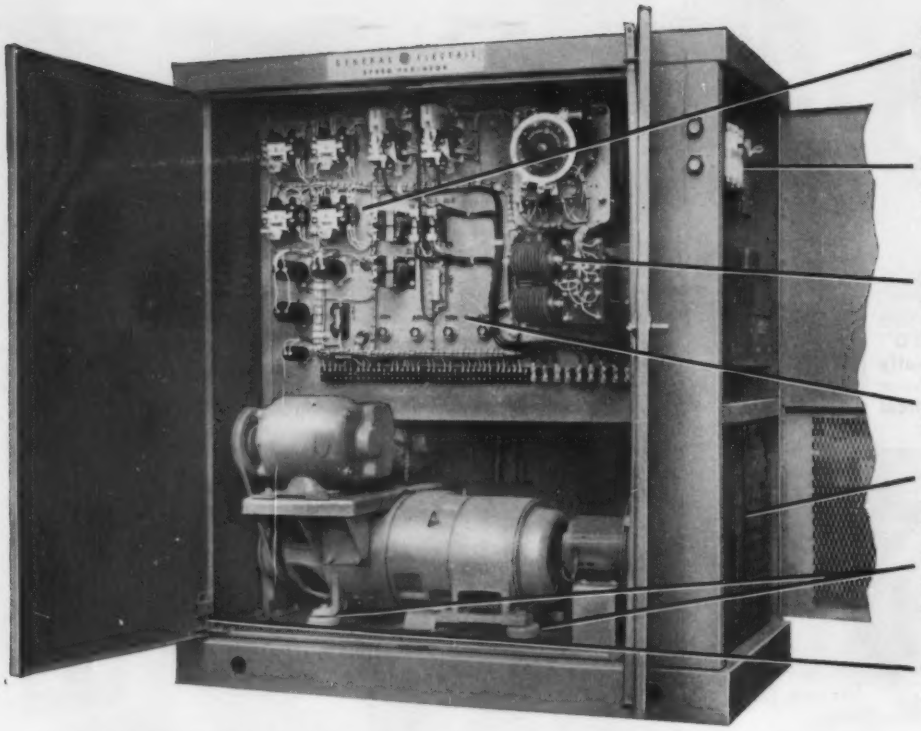
EASILY INSTALLED G-E load-center unit substations bring power close to the load for economical distribution. Co-ordinated units with modern air circuit breakers give maximum reliability, feeder protection.



BETTER PROTECTION AND CONTROL of incoming lines and feeders, motors, generators, are provided with G-E metal-clad switchgear. Magne-blast air circuit breakers assure highly dependable operation.



PRE-ENGINEERED G-E motor control center is factory-wired and assembled, easy to install and service. Interchangeable units are versatile, mechanically strong.



STANDARD CONTROL COMPONENTS are front-connected. Replacements readily available whenever needed.

MAGNETIC STARTING CONTROL and all a-c components protected in separate compartment.

COMPACT AMPLISTAT, easily replaced stock item with no moving parts, requires no maintenance.

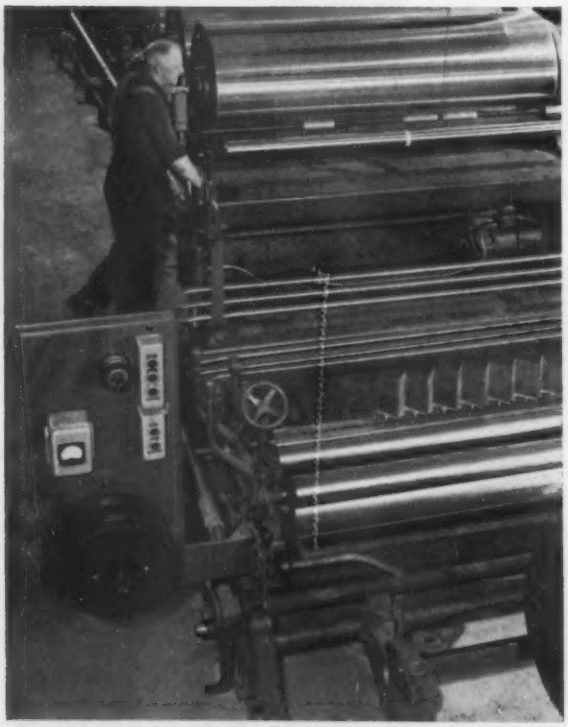
ALL DEVICES IDENTIFIED for quick recognition, easy servicing.

PRESSURIZING FAN AND AIR FILTER keep unit free from lint and dirt. Filters easily replaced.

VIBRATION DAMPERS supporting m-g set minimize vibration and reduce noise level.

HINGED, REMOVABLE DOORS for quick, easy accessibility.

NEW G-E packaged slasher drive gives you easy installation . . . less maintenance



NEW G-E SLASHER DRIVE maintains tension automatically, keeps elasticity uniform. On panel are speed and tension control rheostats, tension indicator, push-button station.

Winds up to 20% more yarn on the beam

LESS MAINTENANCE—Now, General Electric's slasher drive incorporates the amplistat, a static magnetic amplifier. With no moving parts, maintenance is cut to a minimum. To reduce downtime further, the positive-pressurized cabinet and inexpensive glass fiber filters help keep lint and dirt from power unit. Protected within case, all components are easily reached through hinged doors.

EASY TO INSTALL—Power unit comes assembled, wired and tested, and requires no special foundation. Just set unit in reasonably level position and run in conduit.

BETTER PERFORMANCE—By setting a simple dial, stepless adjustment of beaming tension can be made over a wide range to suit yarn sizes and number of ends. The G-E amplistat maintains settings automatically—makes possible up to 20% more uniformly hard-packed yarn on the beam.

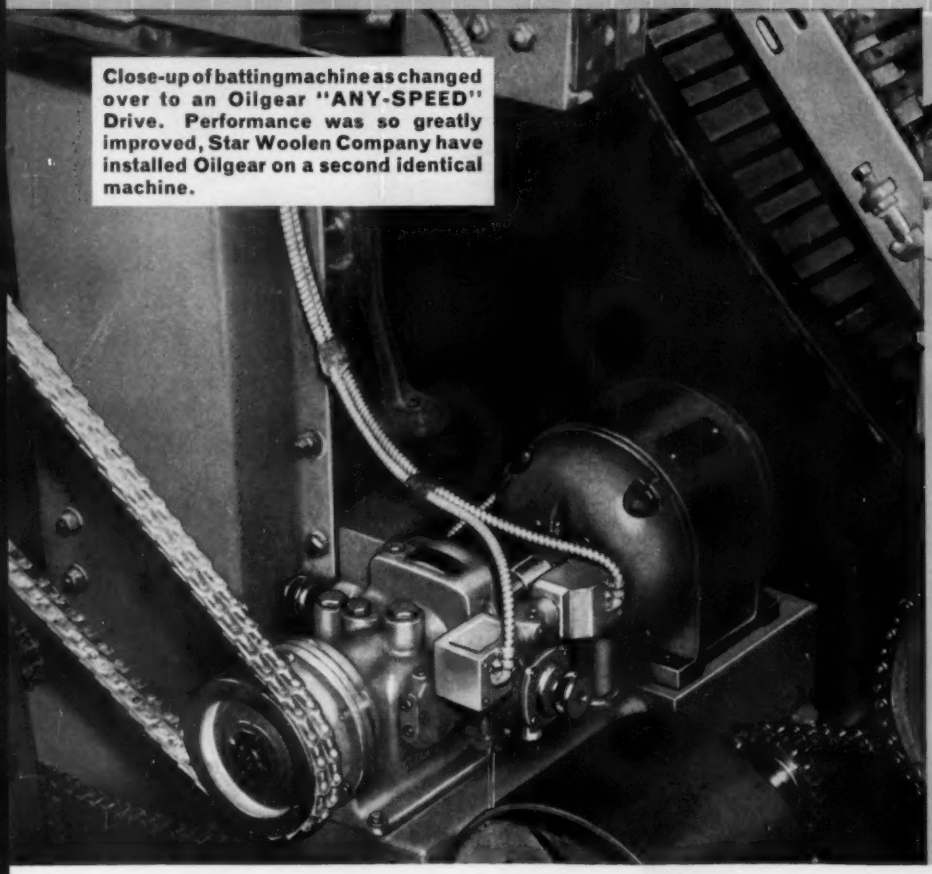
Included in General Electric's new packaged slasher drive are: (1) compact, factory-assembled power unit, (2) adjustable-speed d-c drive motors and (3) operator's controls which can be mounted in most convenient locations.

FOR MORE INFORMATION—Contact your G-E Apparatus Sales Office. A specialist will show you how to get the best from your slasher operation. Direct Current Motor and Generator Department, General Electric Co., Erie, Pa.

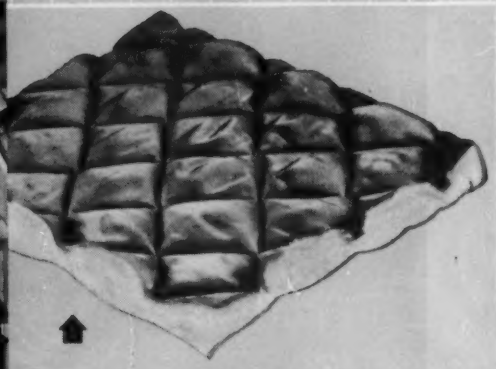
815-5

GENERAL ELECTRIC

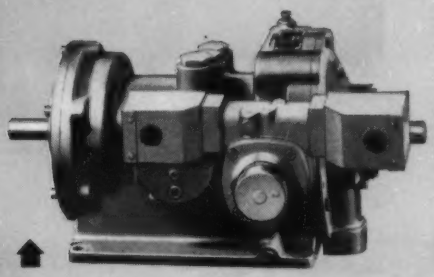
WITH OILGEAR "ANY-SPEED" REVERSING DRIVES— PRODUCTION WENT UP



Close-up of batting machine as changed over to an Oilgear "ANY-SPEED" Drive. Performance was so greatly improved, Star Woolen Company have installed Oilgear on a second identical machine.



NY-SUL-LITE (nylon batting) material manufactured by Star Woolen Company and used in famous make sports jackets, snow suits, and comforters.



Oilgear Type AXB-33 "ANY-SPEED" Fluid Power Transmission Drive.

A 26% INCREASE FROM SMOOTHER REVERSALS. OILGEAR PAYS FOR SELF IN ½ YEAR.

Just one of the many advantages of Oilgear "ANY-SPEED" Drives is highlighted here. The Star Woolen Company of Cohoes, N. Y., operates cross-lay batting machines. Original equipment included a leather belt and clutch reversing device because manufacture of the product requires cross-laying of nylon fibre or wool at periodic intervals. Reciprocation occurred a maximum of 22 times a minute. The going was so rough that the machine was frequently down.

When Star Woolen Company installed an Oilgear Reversing Transmission Drive, the improvement promised was immediate, and other advantages became apparent. The Oilgear drive cushioned acceleration and deceleration so smoothly that mechanical failure dropped sufficiently to give them 15% more production from that one factor alone. The speed of operation has been increased to 30 reversals a minute; operator can select "ANY-SPEED" from zero to maximum; positive, fast-acting electro-hydraulic control through manual push-buttons or automatic switches gives them a far more versatile machine, enabling them to handle jobs hitherto denied them. The Oilgear "ANY-SPEED" drive paid for itself in 6 months, out of savings in machine operation alone.

Smooth acceleration, deceleration and reversal, infinitely variable and completely controllable speeds are just part of the Oilgear "ANY-SPEED" Drive story. Don't you want to know the rest of it? It has proved extremely profitable in scores upon scores of machine applications. Write today and tell us something of *your* needs. THE OILGEAR COMPANY, 1577 West Pierce Street, Milwaukee 4, Wisconsin.

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Fluid Power

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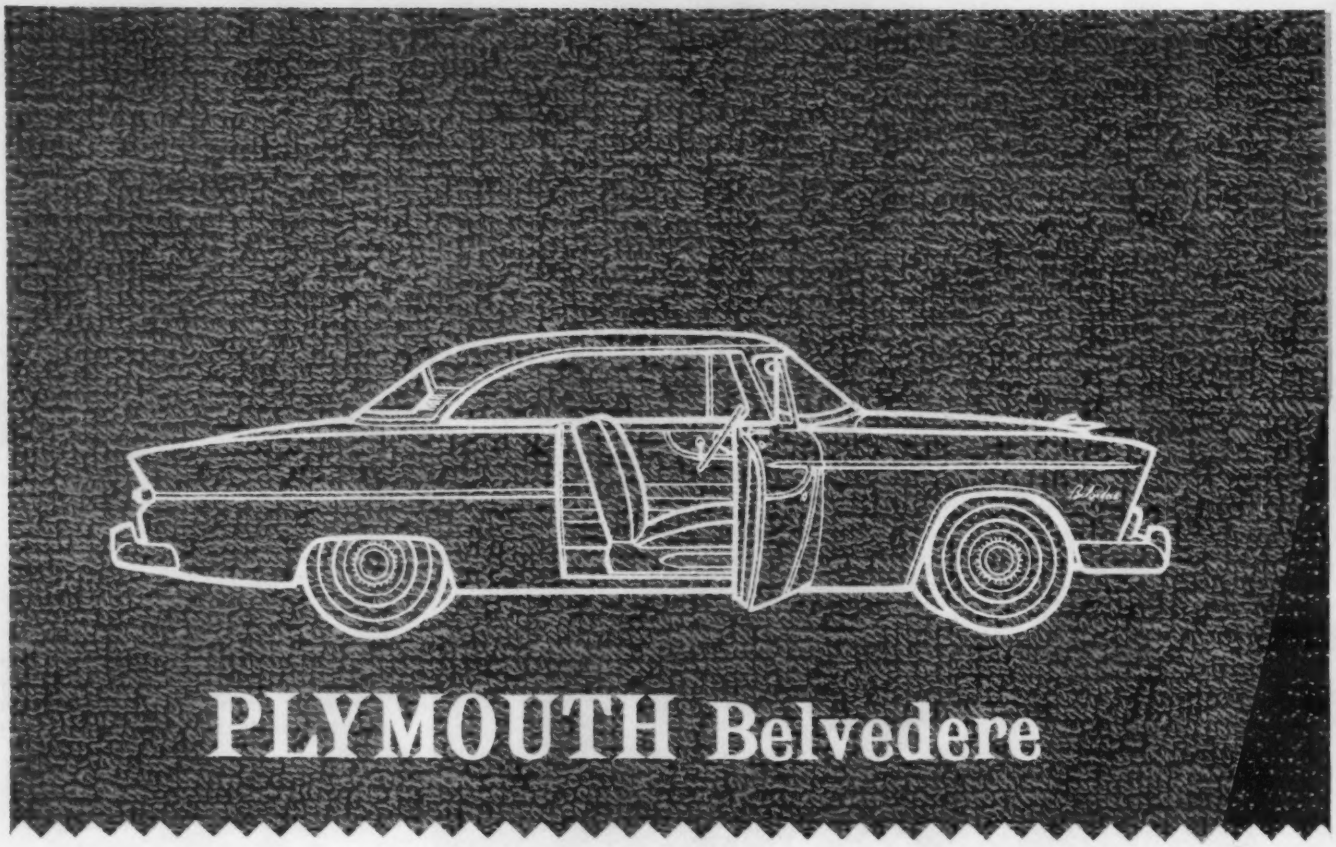
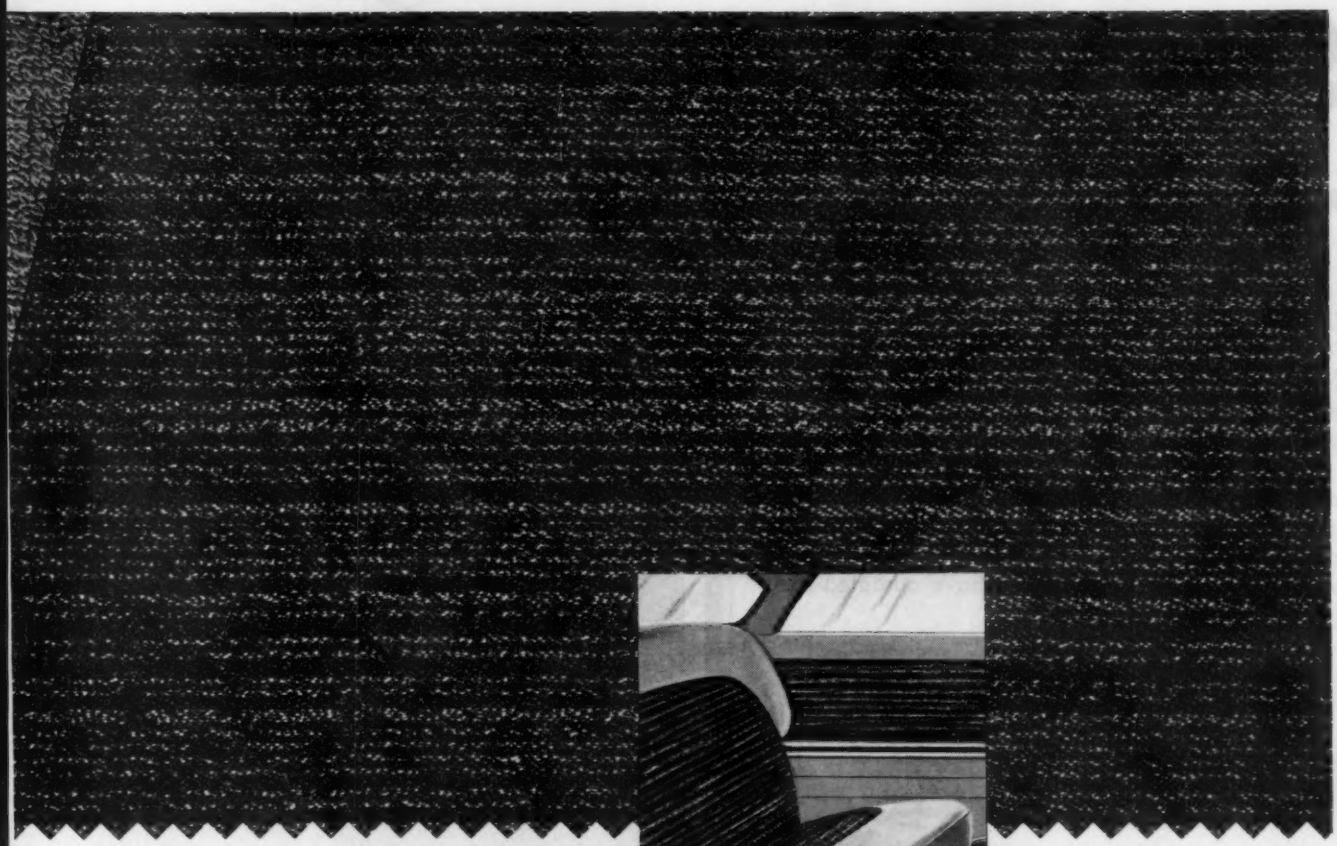
PUMPS, MOTORS, TRANSMISSIONS, CYLINDERS & VALVES



blends



upholstery *by Swift Mfg. Co.*

carpeting *by Masland and by Mohawk*

using THE NEW Nylon Staple

At a time of increasing emphasis on car interiors, IRC is proud that the biggest names in the automotive industry are featuring interior trim blended fabrics using the NEW Nylon Staple—introduced less than a year ago! Leading Mills report it is a better nylon staple, for it has seven new and distinctive features capable of producing new and better effects.

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• BRIGHTER LUSTER • BETTER CRIMP • GREATER RESISTANCE TO ABRASION

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Step Up Roll-Loading Efficiency

...and Cut Costs!... with Foxboro Stabilflo* Pneumatic Loading

Unmatched for operating efficiency and economy at low initial cost! That's the Foxboro #8D Stabilflo Air Motor ... your best choice for roll loading on padders, mangles, quetsch boxes, and other equipment requiring moderate roll separation.

Stabilflo is an air-to-load, spring-to-lift diaphragm motor. Normally connected direct to top roll bearing without levers, it practically eliminates friction. No pressure seals or stuffing boxes. No air leakage. Easy to install. Typical installations have operated for 5 years without attention.

100 sq. in. motor diaphragm, with wide choice of totally-enclosed coil springs, permits roll loads from less than roll weight up to 10 tons.

Write for details on this and other sizes of Stabilflo Air Motors, and on other Foxboro Pneumatic Roll Loading Systems. **The Foxboro Company, 847 Neponset Ave., Foxboro, Massachusetts, U.S.A.**

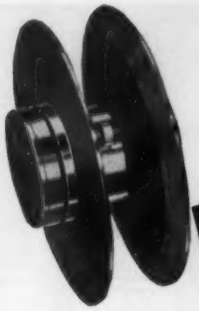
*Trade Mark

Typical application of Foxboro Stabilflo Air Motor. Note splashproof design. Compact control panel delivers regulated air to Stabilflo Motor mounted at each end of roll ... permits easy duplication of uniform loading at any time.

FOXBORO REG U.S. PAT. OFF.

PNEUMATIC ROLL LOADING

FACTORIES IN THE UNITED STATES, CANADA, AND ENGLAND



American Adjustable-Diameter Sheaves feature patented, double-taper hub which locks sheave to shaft, flanges to hub for powerful wedge-grip on the shaft. Flanges move simultaneously for perfect V-belt alignment. Entire unit is dynamically balanced for smooth operation. Adjusts to any pitch diameter in seconds.

Profit or loss? It's the heart of the machine that makes the difference

Probably no other manufacturing operation is so sensitive to speed variation as textile processing, where a 1% speed change often means the difference between profit and loss.

Belt-slip and creep, changes in pitch line under full load, differences in actual motor speeds from rated speeds and other variables can cause speed changes as high as 11% or more, on V-belt drives.

Best answer to the problem is simple, obvious, logical—an American Adjustable-Speed V-belt Drive. These drives permit fast, easy speed changes up to 100% by a simple screw adjustment which changes the pitch diameter of the drive sheave. No pulley switching, no expensive transmissions, little down-time is involved.

You'll find no more economical—or efficient—method of adjusting textile machinery to the one *right* speed for every process than American Adjustable-Speed Drives. See your distributor today or write for full details without obligation. The American Pulley Company, 4226 Wissahickon Ave., Philadelphia 29, Pa.

At the Profit End of the Machine

Power Transmission by

AMERICAN

PULLEY COMPANY

AIM* for the best in production line packaging with new Acme Steel Strapping Machines

Acme Idea Man J. H. Scott Birmingham, Ala. helped Pepperell with this packaging idea

ask your *Acme Idea Man to help solve your problems

Pepperell Manufacturing Company, one of the country's leading textile manufacturers, is enjoying new production efficiencies and economies with this new Acme Steel F3 Automatic Strapper. (Idea No. 438.) *One* operation applies three straps simultaneously with the proper degree of compression, weighs and directs the flow of cartons on a motorized conveyor. Packages are uniform in appearance, straps are placed accurately, and because of uniform compression, they are easier to tier for warehousing. Contents of cartons are safe and secure . . . pilferage and shipping damage are minimized.

This is the type of progressive engineering and forward thinking your Acme Idea Man can offer you. Why not consult with him—let him analyze your present packaging and shipping methods? Call him at the nearest Acme Steel office, or write Acme Steel Products Division, Acme Steel Company, Dept. EE-75, 2840 Archer Avenue, Chicago 8, Illinois.

AIM *For Safe, Lower-Cost Shipping*

ACME STEEL

CARBONIZING

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NOW!... Eliminate two steps between carbonizing and fulling

RINSING

FULLING

NOPCO 1479-D STABLE IN SODA ASH
In 14 ounces per gallon of soda ash ordinary fulling agent separates out...
...but Nopco 1479-D maintains a uniform solution

You've been asking for it for years. And now Nopco offers you, in Nopco® 1479-D, a fulling agent so tolerant to high amounts of soda ash that you can go straight from carbonizing to fulling—no need for neutralizing and rinsing.

Nopco 1479-D not only remains stable in soda ash solutions up to 14 oz. per gallon, but is not salted out by the sodium sulphate formed by the carbonizing acid and soda ash.

Also, since Nopco 1479-D works effectively either in neutral or alkaline solutions, it can be used for fulling greige goods as well as dyed pieces.

This is by no means its only advantage. The fact that Nopco 1479-D is 83% solids means important savings to you in labor and freight.

Other advantages of Nopco 1479-D

1. Good wetting and penetration of heavy fabrics
2. Rapid solution in warm water (120° to 140° F.)
3. Thorough rinsing in less time
4. Unaffected by hard water
5. High calcium tolerance (from pulled wool stock)
6. Excellent emulsifier of processing oils

Since the amounts of detergent and alkali depend upon the type of goods, the hand desired, and other factors, the Nopco technical service will gladly recommend the fulling formulation best suited to your operation. Write for full information on this time-and-cost-saving detergent today.
Nopco Chemical Company, 312 Fuller St., Harrison, N. J.

NOPCO

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To all textile mills:

Brainard® gives you UNIFORM HIGH QUALITY Strapping ...at no extra cost

Brainard has complete control of manufacture . . . from ore to finished strapping. This integrated operation results in the best possible quality control. Every strapping order is carefully inspected by steel craftsmen at each step in the production process.

Brainard tensional strapping, produced in our own rolling mills, is furnished in continuous length, oscillated wound coils. It is coated with a high lustre, rust-resistant, black-painted or electro-galvanized finish.

Formed edge strapping is available for use on cylindrical packages where conventional strapping has a tendency to slip, such as on large rolls of paper.

The next time you order steel strapping, call your nearby Brainard representative. Let him show you how Brainard quality can improve strapping performance . . . at no extra cost! If you would like to have a Brainard representative call, write to Brainard Steel Division, Dept. T-7, Griswold Street, Warren, Ohio.

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The Evil Men

Every now and then we learn of some action by a mill or mill organization that astounds us—an action that, perhaps for lack of better description, you might call social and industrial evil.

One such practice that has come to our attention in recent weeks is that of firing workers for no other reason than the fact that they are 40 or 50 years old and younger workers are available. So far as we have been able to learn, in this particular instance the practice has been going on for only a few months and has not spread to any great number of mills.

It is useless, of course, to speculate on why a mill would do such a thing. Undoubtedly, the speculations would quickly bog down in the dark, impenetrable mind and pensonality of the man in the organization responsible for the policy. A more useful course is to leave him to heaven, with the hope that his tenure in the textile industry will be short, and take a look at older workers.

Older Workers Are Better

A recent study was made by the University of Illinois to find out how older workers compare with younger workers. Defining older workers as workers in their 60s and 70s, the university researchers interviewed supervisors in 20 companies. These supervisors collectively had 1,025 older workers in their charge, working alongside a greater number of workers under 60 years of age.

Comparisons were made between the older and younger workers on over-all performance, absenteeism, dependability, work quality, output, and ability to get along with others. Here is how the supervisors rated the older workers:

Over-all performance: 16% excellent; 32% very good; 36% good; 15% fair; 1% poor.

Absenteeism: 70% absent less than younger workers; 23% about the same; 7% more often.

Dependability: 50% more dependable than younger workers; 44% about the same; 6% less dependable.

Work quality: 36% better than younger workers; 57% about the same; 7% poorer.

Output: More than 75% of the older workers had production records equal to or higher than the records of younger workers.

Relations with others: 33% got along with others better than younger workers; 60% about the same; 7% not as well.

What Else Is Expected?

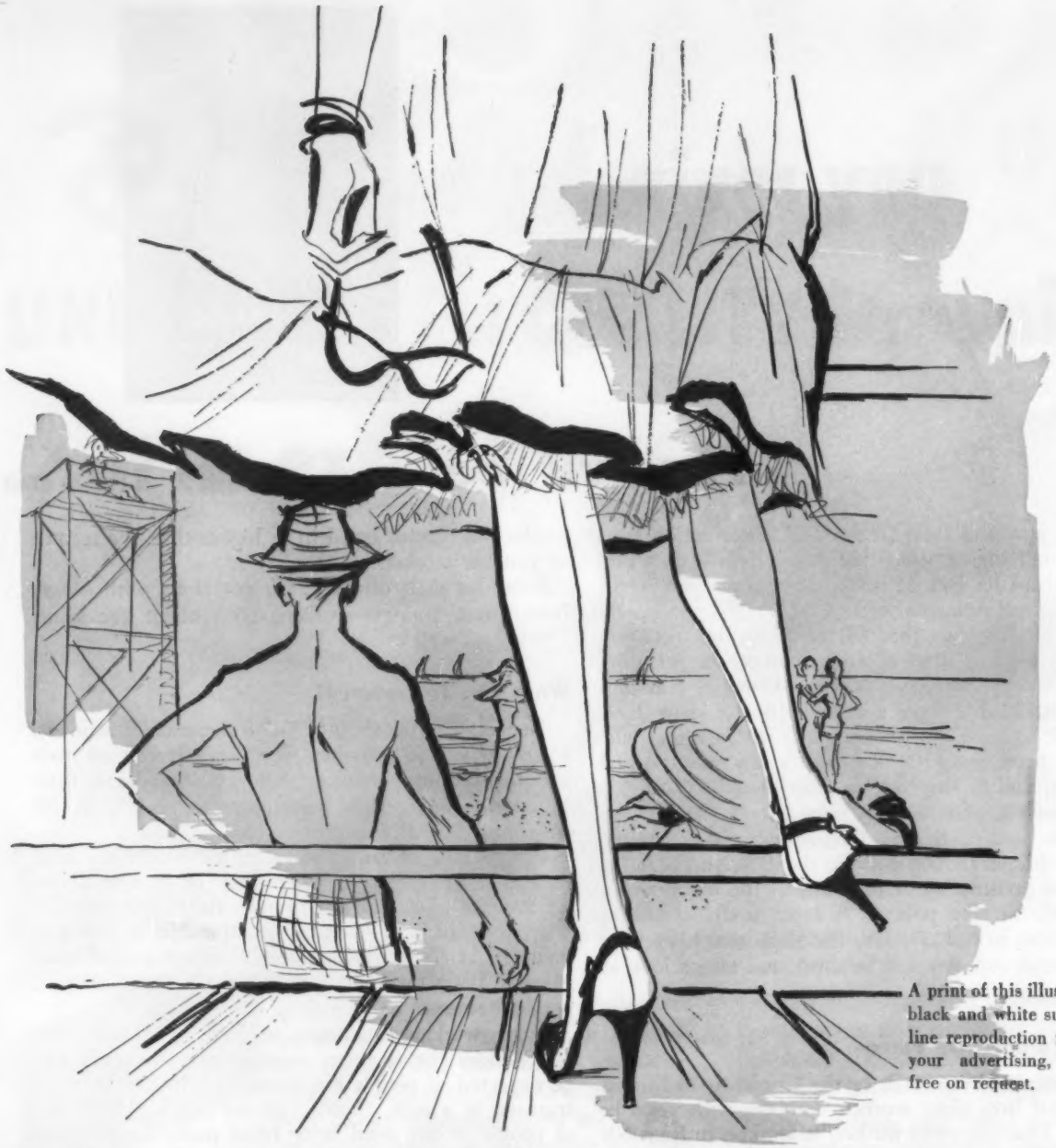
Generally, only about 7% of these older workers, some of them in their 70s, were less effective on their jobs than younger workers. On the other hand, their superiority ran to such percentages as 16, 33, 50, 70, and 75 in the different measurements.

In the face of such evidence, we would say that mill men firing people when they reach ages above 40 and 50 not only are individuals of questionable character, but they are also questionable as businessmen. They are sacrificing one of their companies' most valuable assets for some unsound, not to say vindictive, personal reason.

In our working experience, we have found that little else besides the qualities measured in the study can be expected of people employed to help do the work required in a mill. Years ago, we heard ugly stories of people in dire need being hired partly for purposes other than work; but those isolated cases disappeared long ago. Even in those days, so far as we ever knew, youth was not a requirement for holding a job.

Besides the human misery caused by these acts of a few questionable mill men, there is a much wider effect that touches the whole textile industry. Inevitably, one such act, which people everywhere find odious, largely wipes out the good a hundred other mills can do to improve the character and reputation of the industry. While there is nothing the industry can do directly to remove these rotten apples, other mill men can bring at least moral pressure to bear on them. If we cannot stop evil practices by irresponsible individuals, we can at least let it be known that we as textile men and as an industry do not condone them.

O. M. Thomas



A print of this illustration in black and white suitable for line reproduction for use in your advertising, available free on request.

A FACT: In 1954, a total of 838 full-fashioned stocking machines were scrapped. Included were 333 51-gauge machines, indicating replacement of less productive equipment with newer high-speed machines regardless of gauge or its popularity. (Textile Machine Works 1954 Statistical Survey.)

In the hosiery industry, the one unyielding force is obsolescence. Compare the production of your least efficient machinery with a "Reading 100" Full-Fashioned Knitting Machine—in courses per minute, dozens per hour, salability of fabric. The "Reading 100" is not only a fast multiple-section machine, but it is also a reliable one. And with every Reading Machine you get the benefit of Textile Machine Works' engineering help, service and technical experience. Let us present the "Reading 100" story in your office, at your convenience. Write us today.

TEXTILE MACHINE WORKS, READING, PENNA.

The "READING 100"
Full-Fashioned Knitting Machine

30 Sections 51, 60, 66, 75 Gauge

TO AMERICAN BUSINESS...

Thanks for Taming a Wild Horse

This is a message of appreciation to American industry. The occasion for the message is the completion of our eighth annual McGraw-Hill Survey of Business' Plans for New Plants and Equipment.

To a considerable degree, our appreciation is personal. It goes to the companies whose cooperation made our survey possible. Twice as many companies as in any previous McGraw-Hill annual survey carefully answered our questions about their plans to invest in new producing facilities. They gave a great deal of expensive time to the job. The cooperation of these companies, which employ nearly eight million workers, put the results of our survey on the firmest footing, in terms of coverage, it has ever had. For this cooperation we are most grateful.

But our appreciation is much more than personal. It extends in even greater degree to the kind of planning of investment in new plants and equipment which our survey revealed. The nature of this planning holds out promise that American industry is on the way toward bringing under control what historically has been one of the most upsetting forces in the American economy—the violent fluctuations in business capital investment. Progress in ironing out these fluctuations gives occasion for public gratitude.

Very Good Business News

The part of our surveys that attracts the widest interest is the news they give about immediate business prospects. And this year the news is very good. The survey results indicate that American business as a whole plans to invest $29.5 billion in new plants and equipment this year. That is 5% more than was invested last year, and a new high for any year.

Plans for the years 1956-1958 are also remarkably encouraging in terms of the amount of investment in prospect. American business reports that it is already planning to spend within 3% as much for new plants and equipment in 1956 as in 1955. In the past, the expenditures planned for future years have always been sharply lower than those planned for the current year. This is understandable enough. It is sometimes impossible to anticipate all the expenditures that will be necessary a year or more hence. Thus the fact that plans are already made

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A full report of the results of the eighth annual McGraw-Hill Survey of Business' Plans for New Plants and Equipment will be sent to anyone requesting it from the Department of Economics, McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York 36, N. Y.

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to spend almost as much in 1956 as this year is very good news about business prospects. The level of investment now planned for the years 1957 and 1958 is also remarkably high—far higher than ever reported for years that far ahead in previous McGraw-Hill surveys.

Taking the Long View

The fact that these plans exist is of immense constructive significance. It clearly indicates that more and more, and now in dramatic degree, American business is taking the long view in making its plans for capital investment. It is developing a program which, if successfully carried out, will go far toward eliminating the habitual, destructive surging and sagging of what is in effect the central power house of our economic system—capital investment by business. Upon the level of this investment depends not only the general state of our prosperity but our progress in raising the American standard of living with new products and new and better industrial processes.

Seven years ago, when we first asked industry to estimate its capital spending beyond the current year, only a small minority of companies could give us any estimates at all. This year, 87% of the cooperating companies—and it was a far larger number of companies—could comply with our request for estimates for the years 1956-1958.

It Pays to Bet on Growth

A number of developments help explain the increase in long-range planning of capital investment. One is the increasing technical complexity of American industry. It often takes longer, in this complicated age, to work out a successful installation of new plants and equipment. Another reason for long-range planning is American business management's increasing conviction that it pays to bet on the demonstrated capacity of the American economy to grow over the long pull. With this goes a corresponding determination not to let short-term business fluctuations upset individual company plans for growth through addition of new plants and equipment. An additional factor, and one of great and increasing importance, is the sense of public responsibility on the part of American business leaders who want to help prevent destructive swings in the levels of new investment.

It cannot be too strongly emphasized that there is still nothing automatic about the carrying out of these long-range plans for business spending. Actual expenditures are still governed in major degree by the general health of our economy. This is fully attested by the fact that the current business recovery has led to a substantial upward revision of the investment plans reported to us last fall when we made a preliminary check of plans for 1955. Either private economic excesses or a reversal of the recent improvements in federal tax policy could gravely upset realization of present plans. Fortunately, neither of these possibilities seems to be an immediate threat.

The very fact, however, that American business management has made these plans and will do its utmost to carry them out is a development of tremendous constructive importance for the American economy. It means that major efforts are being made to tame what historically has been an economic wild horse—the process of capital investment by business. Both for doing it, and for telling us about it in our annual surveys, we extend to American industry our sincere thanks.

This message is one of a series prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nationwide developments that are of particular concern to the business and professional community served by our industrial and technical publications.

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Donald C. McGraw

PRESIDENT

McGRAW-HILL PUBLISHING COMPANY, INC.

Textile World
July, 1955
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What Mills Plan To Do in The NEXT FOUR YEARS

Latest information on what textile mills are planning in spending for improvements shows that—

- **$349-million will be spent this year**
- **88% will go for machinery and equipment**
- **Sales will rise 8% this year, 17% in four years**

By P. M. THOMAS, Editor, TEXTILE WORLD

THE SWING to better times in late 1954 and early 1955 has brought a sharp change in mill plans for the future. Most notable is a change in what they plan to spend money for.

Last year, only 5% of the dollars spent by mills went for expansion of capacity; 95% went for replacement and modernization.

By April of this year, 23% of the dollars planned for expenditure by mills was earmarked for expansion and only 77% for replacement and modernization.

These figures, based on the latest survey of capital-expenditure plans made by the McGraw-Hill Economics Dept., follow the general pattern of plans in most U. S. manufacturing industries. They indicate that confident action in planning for the future has replaced the lull brought on by the dip in business in 1953 and early 1954.

While it would be risky to try to project the survey results to cover the whole textile industry, the results are important in that they show a decided change in plans of the mills in the survey. These mills represent a cross section of the industry and account for a sizable percentage of the industry's total production and expenditures.

How the Money Will Be Spent

The pattern for spending, covering both expansion and modernization, is the same for 1955 as for 1954: 12% for construction and 88% for equipment.

This is the first time dependable information has been available on the breakdown of construction vs. equipment expenditures. Therefore, there is no way of knowing if 12 vs. 88% is normal for the textile industry.

Our guess is that it is close to normal, since 1954 was a year of low expansion and high replacement expenditures and 1955 is the reverse. In a period (perhaps 1951 and 1952) of mill migration when many new buildings are wholly or partially equipped with old machinery, the 12% for construction may rise slightly.

Comparison of construction vs. equipment spending in the textile industry with that in other industries bears out the often-used expression that "the textile industry is basically a machinery industry."

Where the textile industry spends only 12% of its improvement dollars for construction, the all-U. S.-manufacturing-plants average is 28%. Thus, the textile industry has to spend less than half as much for bricks and mortar as the average manufacturing industry.

Some specific comparisons for 1955 are:

Industry	Const.	Equip.
TEXTILE	**12(%)**	**88(%)**
All Mfg.	28	72
Primary metals	21	79
Metalworking	27	73
Chemical processing	31	69
Food and beverages	37	63

How Much Will Be Spent

Actual dollars spent in 1954 amounted to $331-million. On the 12-to-88 basis for construction and equipment, the dollars came out as $39.7-million for construction against $291.3-million for equipment.

Plans for 1955 call for a 5% increase, which will amount to $349-million. That breaks down as $41.9-million for construction against $307.1-million for equipment.

The 5% increase in mill-improvement spending for 1955 places the textile industry above the 3% average for all U. S. industry. Although some industries plan a greater increase than textiles, other industries have curtailed improvement below their 1954 levels. Some comparisons are:

Industry	1955 vs. 1954
TEXTILE	**+ 5(%)**
All Mfg.	+ 3
Primary metals	+ 28
Metalworking	— 3
Chemical processing	+ 7
Food and beverages	— 7

A fact not shown by these figures for manufacturing industries is that commercial firms (trade, finance, construction, and service industries), which spend about three-quarters as much for improvement as manufacturing industries, plan a greater increase in 1955, 15% against 3% for manufacturing.

When commercial firms are combined with manufacturing, the total U. S. increase for 1955 over 1954 is raised from 3% to 5%, for a total expenditure in 1955 of $29.4-billion.

For the three years following 1955, the textile industry now plans to spend for improvement (including both expansion and modernization):

1956 — $303 (million)
1957 — 320
1958 — 320

Plans for future improvement, of course, may or may not be carried out. Experience with the McGraw-Hill survey is that they not only will be carried out but will be increased, since most mills do not make firm plans more than a year ahead.

Sales Expected To Increase

Mills expect their sales in 1955 to be 8% above 1954. By 1958, they expect an additional rise of 9%, for an over-all four-year increase of 17%.

In general, this optimism about sales is about the same as that expressed by all other manufacturing industries. All industries expect an increase, both in 1955 and for the next four years. Comparisons are:

Industry TEXTILE	1954-1955 (+) 8(%)	1954-1958 (+)17(%)
All Mfg.	7	21
Primary metals	10	18
Metalworking	7	23
Chemical processing	7	21
Food and beverages	4	15

Will Capacity Be Expanded?

One of the important questions in the textile industry in late months has been whether or not the industry must expand its capacity [TW, Nov., '54, p. 93]. While there are no figures in the survey for capacity-expansion plans by the textile industry, inferences can be drawn from (a) sales expectations, (b) rates of operation, and (c) comparison with other industries.

At the end of 1954, the mills in the survey were operating at 88% of capacity. They prefer to operate at 92%. These figures exactly coincide with the chemical-processing industry and are higher than any other U. S. industry. Comparisons are:

Industry TEXTILE	Dec. '54 rate 88(%)	Prefer 92(%)
All Mfg.	84	89
Primary metals	82	87
Metalworking	81	86
Chemical processing	88	92
Food and beverages	82	88

If sales in the next four years increase as they are expected to, all U. S. industries must either push their equipment at a rate considerably above the rate they prefer or increase their capacity. A tabulation of spare capacity (the difference between the end-of-1954 operating rate and the preferred rate), expected sales increase by 1958, and expansion plans in other industries shows:

Industry TEXTILE	Spare capacity 4(%)	Sales increase 17(%)	Capacity increase ..
All Mfg.	5	21	16
Primary metals	5	18	11
Metalworking	5	23	18
Chemical processing	4	21	22
Food and beverage	6	15	14

These figures seem to indicate that the textile industry has reached the point where it has absorbed the over-capacity that has hounded it for a quarter of a century and now has the same potential for increase as other U. S. industries.

How Soon Should Equipment Pay?

One striking result of the survey is how quickly the textile industry expects to get its money back out of new equipment. No other industry in the country makes equipment investments with the same short-term pay-off expectations.

Comparisons for the number of plants specifying the payoff period they expect are:

Industry TEXTILE	1 year 13(%)	2 years 13(%)	3 years 19(%)	4 years 25(%)	Total 70(%)
All Mfg.	5	12	19	27	54
Primary metals	5	5	20	10	40
Metalworking	5	14	18	18	55
Chemical processing	1	8	21	22	52
Food and beverage	6	16	16	16	54

GENERAL FOREMAN Gomer Keller brings a second-quality-cloth report straight from the cloth room and gives it to Assistant Foreman Murray Nabors.

Simple WEAVE-ROOM *Organization Pays at Birmingham Mill*

● Two-step direct supervision clears the way for weaving combed and carded yarns into chambrays, seersuckers, and similar fabrics at 93% efficiency and 3 to 3½% weave-room seconds

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

WEAVE-ROOM ORGANIZATION in its simplest form is working well at Avondale Mills' Birmingham plant where only fine-yarn cotton fabrics are woven.

A general foreman of weaving has charge of the 794 Draper looms located on two floors, one above the other. Three assistant foremen on each of the three shifts work directly for the general foreman. Each of the two assistant foremen in the lower weave room has 243 E-model looms 40 ins. wide running at 161 ppm. The assistant foreman in the upper weave room has 200 46-in. XD looms running at 172 ppm. and 108 40-in. E-model looms running at 161 ppm.

Several colors of warpwise stripes are run in chambrays, seersuckers, cord suitings and similar materials. Combed warp yarns range around 40s; carded warp yarns average above 26s. Combed filling yarns range around 40s; carded filling yarns average 30s. Seersuckers and chambrays average from 60 to 68 ppi.

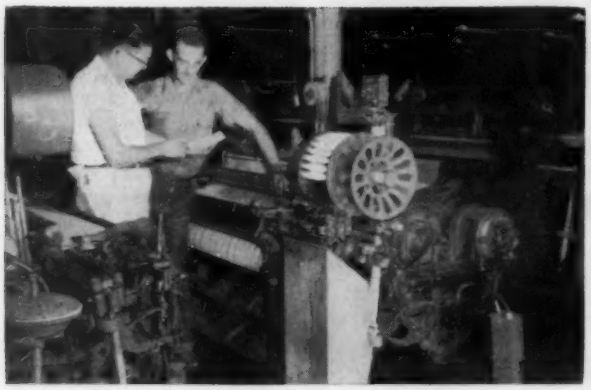
All filling yarn is rewound on Abbott quillers. Filling bobbins are 8 ins. long and have brass tips.

How the Supervisors Work

The general foreman has direct charge of all three shifts in both weave rooms, and each of the nine assistant foremen reports directly to him. He meets with the assistant foremen on every shift once each day to discuss production, second-quality cloth, new styles of cloth, and other problems.

The general foreman goes to the cloth room at regular intervals throughout the day shift to check on second-quality cloth as the cloth is graded. He gives all seconds reports to the assistant foremen.

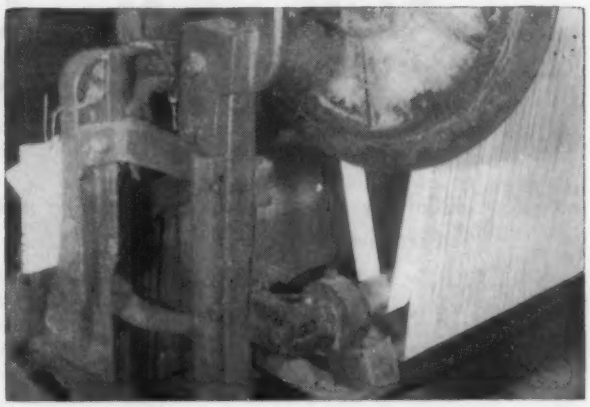
The assistant foreman immediately goes to the loom making seconds to find the trouble. As soon as he locates the trouble, he gives the seconds ticket to the loomfixer and has him check and fix the loom. When the loomfixer finishes checking the loom, he



ASSISTANT FOREMAN goes directly to the loom and checks it with the report. Then Loomfixer E. S. Williams fixes the loom at once.

WEAVER Bennie Teal is inspecting a seersucker fabric with a flashlight on one of her 40 looms. She makes an inspection twice each shift.

WEAVER'S JOB is weaving only, except for wiping lint off handrails and harnesses once every three shifts. Daisy Breed spends most of her time patrolling.



SEERSUCKER MOTION is simple and direct. A leather strap fastened to the handrail bolt releases the top-beam yarn a given amount at each pick.

returns the seconds ticket to the assistant foreman. Then the assistant foreman checks the loom again to be sure the trouble is eliminated.

To begin his day's work, an assistant foreman comes to work 30 mins. before shift-change time to check the warps to be out on his shift, and he makes a report of the warp-outs. He gives a copy of this report to the general foreman so that the foreman can schedule the work for the tying-in men and warp men.

While an assistant foreman is checking his warps, he also checks them for loose ends and lapped ends.

At shift-change time, the assistant foreman checks to see that all regular employees are on their jobs, and he places the spare hands. A time card is filled out for each employee.

Schedule Controls Daily Job

Other daily routine duties of an assistant overseer are:

1. He shows second-quality cloth to loomfixers and weavers. Cloth is shown up in rolls. Over-all seconds, including yarn seconds, average between 5 and 6%. Weaving seconds average 3 to 3½%. The assistant overseer inspects the cloth for defects on all his looms once each shift.

2. He keeps looms running at high production rate. The assistant overseer helps the loomfixers when they get stuck on a loom and, in general, tries to keep all looms running. Weave-room production averages 92%.

3. He looks after all sample fabrics on his job.

4. He writes all orders for loomfixers' supplies and orders to the shop for motor repairs, floor repairs, etc.

5. Once each shift, he checks seersucker warps to be sure the right amount of crinkle is put in. To check the crinkle, he marks the ground warp with a crayon and a gauge; and then he lets the marks weave into the cloth. He measures the woven cloth with another gauge.

6. He constantly watches for accident hazards such as oily or wet floors.

7. He checks all empty looms, all new drawn warps, and all tie-backs. He points out jobs for the loomfixer to do at the warpout. He rechecks the loom after the warp is started.

8. He inspects all looms when new shuttles are put in. The inspection includes loom alignment, picker condition, loom leather, etc.

Looms Run Without Flagging

The loomfixers' jobs are kept in good condition by constant loomfixer inspection at warp-outs in addition to the checks made by the assistant foremen. The goal in the weave room is to make all loom repairs at warp-outs so that looms will run without being flagged until the next warp-out.

All E-model looms were removed from the weave room three years ago and thoroughly overhauled. At that time, clock-spring-top harness motions were added to all looms. Now all looms are in good condition, and Mill Superintendent G. W. Morriss thinks the looms will never have to be overhauled again.

CONTINUED ON PAGE 168

Alabama Men Look at CARDING Problems

Carding topics covered at the spring meeting of the Alabama Textile Operating Executives included—

- **Cull laps**
- **Picker beaters and production**
- **Metallic card clothing**
- **Drawing-frame operation**
- **Roving-frame draft distribution**

Eleven mills, representing over 700,000 spindles, answered questions on carding practices at the spring meeting of the Alabama Textile Operating Executives at Alabama Polytechnic Institute, Auburn, Ala.

Cull Laps

Methods of reworking cull laps were reported by 10 mills. Percentage of culls range from 0.2% to 7%. Very few mills handle rejects in exactly the same manner.

Mill A—Cull laps are placed on a jig and run into the overflow hopper that feeds back into the main distributing line to picker feeders. Rejects average 2%.

Mill B—Cull laps are rerun on the finisher picker equipped with a Model 7 evener. Stock is changed often, and rejects average 3% at the change.

Mill C—Cull laps are unrolled and rerun through the waste hoppers.

Mill D—Cull laps are fed back into the hopper on the picker by means of a rack-and-drive arrangement feeding at a slow rate. Rejects average 2 to 3%.

Mill E—Cull laps are fed back through the opening hopper directly to the picker as evenly as possible over an 8-hr. period. Rejects average 1½%.

Mill F—Culls are fed into a feeder hopper that is wired to the overflow hopper so that when the overflow is feeding to the pickers, the waste machine runs and the culls are blended with cotton from the opening room. Rejects average 2.4%.

Mill H—Culls are rerun on a setback machine and average 1% with a plus-or-minus allowance of 1 lb.

Mill I—Culls are gradually fed into a waste hopper that feeds into the picker conveyor. Rejects average 1½%.

Mill J—Culls are blended on a setback picker and average 7%.

Mill K—Culls are rerun through the picker. The rejects are placed in a special rack attached to the feed chute back of the back beater section. The lap is placed on the feed apron and fed into the back beater section along with cotton from the feed chute. Every fourth picker is equipped in this manner. Rejects average 0.6%.

Picker Operation

Picker production was reported by 10 mills as varying from 330 to 450 lbs. per hr. Kirschner beater speeds on $\frac{15}{16}$-in. and 1-in. cotton are from 970 to 1,160 rpm. Blade beaters run from 1,020 to 1,300 rpm., the most popular speeds being under 1,160 rpm. Only one mill reported that it did not use blade beaters. Kirschner settings are from $\frac{1}{8}$ to $\frac{5}{16}$ in.

A typical report on picker beaters was made by **Mill K.**

"Production is 343 lbs. per hr.; Kirschner beater runs at 1,000 rpm.; blade beater runs at 1,150 rpm.; Kirschner settings are $\frac{1}{8}$ in. from cut-off plate to beater, $\frac{1}{4}$ in. from beater to feed roll, 3½ ins. from beater to top grid bar, and 5¾ ins. from beater to bottom grid bar."

Metallic Clothing

Experience with metallic card clothing was given by three mills.

Mill C, which has been using metallic clothing for a number of years, reported that the clothing gives bet-

ter uniformity and nep count and that there is no effect on waste or length of fiber in the waste.

No unusual maintenance problems have been experienced except that chokes have to be pulled on schedule. Jams occur occasionally, usually as a result of stock going over the doffer.

To install metallic clothing on a 45-in. card, material costs $496 and labor $98. Damaged spots can be cut out and repaired without pulling off the good wire. Maintenance personnel require a training period of six months.

The cards are stripped once weekly on a mix of 50% Middling and 50% Strict Low Bright cottons.

There was an increase in dust and fly.

Uniformity Up, Neps Down

Mill H reported that sliver uniformity improved 2% and nep count was reduced 3% with metallic clothing. Various grades of cotton have been run satisfactorily.

Waste from stripping was reduced, but the other wastes remained about the same except that flat strips had shorter fibers. There was more dust and fly.

Two men at Mill H can clothe three cards in 28 hrs. at a cost of $70 per card for labor. Maintenance personnel on metallic clothing require thorough training but no more than for regular clothing.

Chokes on the doffer and the nose of the screen are a major problem, but no other serious maintenance troubles have been encountered.

The mill has had only one jam in two years. The trouble was caused by the comb belt coming off; the doffer was damaged when the comb stopped. The card was repaired by blocking off each side of the damaged section and unrolling the good wire onto a reel until the damaged area was reached and removed.

A damaged doffer usually requires 3 to 4 hrs. to repair; a damaged cylinder may take 6 to 12 hrs., since the flats must be removed.

Speeds Increased

Mill J reported no appreciable difference in variation or nep count when the metallic clothing is first ground; the clothing maintains more-constant variation and nep count. Speeds can be increased, and the clothing is better for running lower grades of cotton at a high rate of production.

The cards are stripped with a roller once each shift. Cotton used is 1⅛-in. Strict Good Ordinary carded at 18 lbs. per hr. There are fewer long fibers in the waste, and there is no appreciable difference in the amount of dust and fly in the room.

As to maintenance, Mill J found that the added weight of the metallic clothing causes increased bearing wear. Also, it reported that bruised clothing almost always has to be replaced and that the card must be completely stripped of clothing wire to reclothe it. Very few jams have been experienced.

Another mill reported that it had trouble with the web falling off the card before it reached the comb. It was suggested that a closer setting of the screen probably would stop the sagging.

Drawing Frames

Drawing-frame cleaning and maintenance procedures are as follows:

Mill A—Clean top rolls every three weeks; clean bottom rolls every third Monday. Scrub rolls with a steel brush, clean gears, and check for crooked rolls. Check roll stands, grease the stands, clean gear studs, and check rolls with a level.

Mill F—Clean top and bottom rolls weekly; overhaul every three months. In overhauling, clean top and bottom rolls, take out bottom rolls, clean stands, add grease, inspect gears for loose motion, check roll settings, clean oil holes, clean calender rolls and tube gears, and clean and oil turntables.

Mill G—Clean four frames daily; cycle is 12 days. Clean top and bottom rolls, oil frames, inspect all gears for wear, inspect rolls every two hours for jumpy rolls. Take out all steel rolls twice a year, adjust stands, level frames, adjust turntables, and oil bottom steel rolls. (Top rolls have sealed bearings.)

Mill I—Section man cleans six frames a week. On the day that two frames are scheduled, he removes and cleans top rolls, checks bearings, checks for worn gears, checks knock-offs, and oils where needed. On the day that one frame is scheduled, the bottom and top rolls are taken out and scrubbed and all settings are checked. This schedule results in all rolls being cleaned every nine days. Each frame is overhauled every 45 days, and it is aligned and leveled once a year.

Mill K—Overhaul all frames every six to eight months. Dismantle, replace, and line shafts if necessary. Inspect and replace gears and worn parts. Clean bottom and top metallic rolls, oil bearings, and align frames. In addition to being overhauled periodically, the frames are constantly inspected, adjusted, and cleaned by one man who goes over two frames every 8 hrs. He looks after a total of 57 frames.

Drawing-Frame Settings

Three reports on roll settings and drafts for long-draft roving frames were given.

Mill F, with standard four-roll (metallic top rolls) drawing, said that the following roll settings and drafts are the best for use with 1-in. cotton producing 54-grain sliver: First to second: 1⅜ ins, 2.67 draft; second to third: 1⅜ ins., 2.00 draft; third to fourth: 1¾ ins., 1.27 draft.

Mill G reported that five-roll, eight-ends-up, drawing with metallic rolls has improved sliver evenness. Roll settings and drafts are: First to second: 1⅞ ins., 2.54 draft; second and third, 1⅛ ins., 2.34 draft; third to fourth: 1⅛ ins., 1.31 draft; fourth to fifth: 2⅛ ins., 1.20 draft; total draft: 8.41; draft constant: 269.18.

Uniformity Is 3.7%

Mill K has experimented with three different kinds of drawing frames. Uniformity ranges from 6.7% on some of the older frames to 3.7% on the newest frame. The best roll settings and drafts for 1-in. cotton producing a 70-grain sliver are: First to second: 1 12/32 ins., 3.05 draft; second to third: 1 20/32 ins., 1.81 draft; third to fourth: 1 24/32 ins., 1.45 draft. Eight ends are fed to both the breaker and the finisher drawing.

Long-Draft Roving

Four reports on draft breakdown for long-draft roving were given.

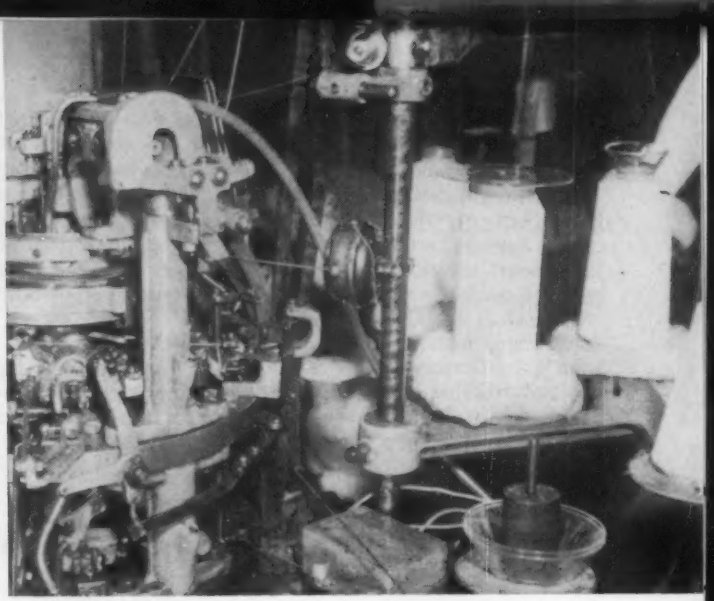
Mill A, making 1.00-hk. roving from 60-grain sliver, drafts 3.20 from first to second roll, 1.08 from second to third, and 2.90 from third to fourth. Total draft is 7.18. Front settings are ⅞ in. over staple length; back settings are ⅞ in. over staple length.

Mill C, making 1.00-hk. roving from 55-grain sliver, drafts 2.57 on both front and back and has a total draft of 6.60. In making 2.50-hk. roving from 55-grain sliver, this mill drafts 5.28 on the front and 3.10 on the back. Roll settings for 1-in. staple are 1⅛ ins. between the first and second roll and 1¼ ins. between the third and fourth roll.

Total Draft Is 6.47

Mill H, making 0.90-hk. roving from 62-grain sliver on 10x5 frames, has a total draft of 6.47, a front draft of 2.20, and a back draft of 2.94. Roll settings are 1¼ ins. on the front and 1⅞ ins. on the back. In making 0.70-hk. roving on 12x6½ frames, the total draft is 5.01, front draft is 1.67, and back draft is 3.00. Roll settings are 1¼ ins. on the front and 1⅞ ins. on the back.

TAKE-UP BAR is lowered to within 1 in. of the yarn cone, and plastic covers are slipped over cones to control stretch yarn.



TRUNCATED-CONE device over yarn cone has four bristles to control 15-den. Agilon yarn. The take-up bar is adjustable.

How Mary Grey Mills Knits STRETCH HOSIERY

● Pioneering in the stretch-stocking field, this Virginia mill is producing full-fashioned and seamless stockings that stretch in all directions with no special attachments to existing machinery. The stockings are made from Agilon yarn to give a better fit and longer wear.

By **JAMES H. BLORE,** Associate Editor, TEXTILE WORLD

AFTER MONTHS OF RESEARCH, Mary Grey Hosiery Mills, Bristol, Va., is now in production of women's full-fashioned and seamless stockings made from Agilon stretch yarn. The hosiery, known as Mini-Lon stockings, is made in four sizes.

The switch from plain to stretch stockings presented some problems in sizing. About 180 doz. test stockings were made before the suitable sizes were decided upon.

The company retains 800 women who constantly test its hosiery, and these women tested the stretch stockings. These women come from all walks of life and include college students, mill workers, retail employees, and housewives.

The women return a questionnaire to Mary Grey with comments on wear, fit, feel, and other factors. Comments on the stretch stockings include a longer wearing time than conventional hosiery because the fabric tends to stretch in all directions when strain is placed on any part of the stocking.

Full-Fashioned Hose

The 20- and 30-den. yarns knit very well on 51- and 60-gauge machines, although the mill has had to evolve some special techniques to control the liveliness of the stretch yarn. This liveliness tends to cause a thick place or slub in the fabric.

This problem is being tackled successfully on the 15-den. yarn with brushes that tightly touch the pirn to keep the yarn under constant control. The yarn is then run straight to the carrier with no further tension.

On the 51-gauge machines that run 30-den. yarn, this problem has been solved by dropping the guide bar to a position about 1 in. from the top of the yarn cone.

A plastice cap on the cone further aids the control.

No oil or emulsion is used on the yarn. The troughs are empty, but the yarn is run over extra tension rods in the trough box.

Agilon yarn has been run for four months with no excessive wear on the yarn carriers.

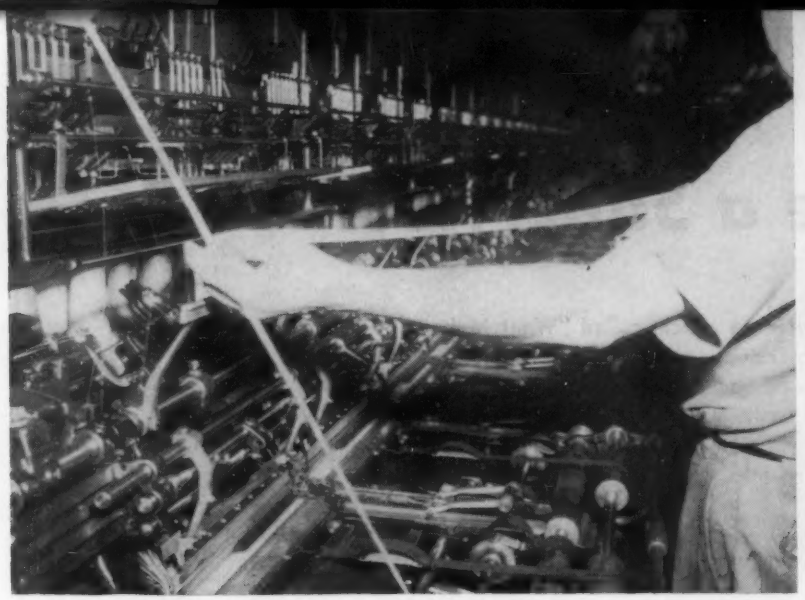
Welt and reinforcing yarns are all Agilon yarn. The welt is made from 40-den. yarn, and 30-den. yarn is used for reinforcing the foot.

Stockings Knitted Slacker

To obtain full elasticity in the finished stocking, the stitch is knitted slacker than for conventional stockings. This practice gives more coils to expand in each stitch. The stitch is about 10% looser than for normal hosiery; the main star is loosened 12 nicks from normal 15-den. work to get best results from 30-den. yarn.

Three-carrier knitting is used to eliminate rings that might occur from the 30-den. yarn. The air conditioning at Mary Grey is controlled at 80° F. and 50% r.h., but the mill believes that the Agilon might run better at 48% r.h.

The stretch yarn has not made possible the reduction of length-control



STRETCH STOCKINGS are knitted with a loose stitch and come from the knitting machines several inches longer than usual.

STRETCH in the welt is far greater than in conventional stockings. This test is done on stockings from seamless machines twice daily.

tests. Length tests are still made twice weekly on each machine section on a Premier selvage tester. Length tests on finished stockings are also made weekly.

When the stretch stockings are taken from the knitting machines, they are much longer than normal stockings, although they contain about 100 fewer courses. The stockings contract about 4 ins. when they have been off the knitting machine for a few hours.

Mini-Lon stretch stockings are not preset but go straight to the seamers. Seaming production is the same as for normal stockings, but the foot is stretched slightly during seaming to get full elasticity in the seam. Six-turns-per-inch yarn is used for seaming, but experiments are being made with Agilon for the seaming thread.

After seaming, the stockings are put in bags for Dunn-System treatment. The scouring bath is run for 30 mins. instead of the usual 15 mins. This longer process gives extra contraction and elasticity to the hosiery. During this process, the stockings contract to about 16 ins. long.

After dyeing, the stockings are boarded in Paramount machines on conventional forms. Usual times and temperatures are used, but the production is a little slower than for normal goods.

Seamless Hose

The 15-den. yarn runs better on the 400-needle seamless machines than on the full-fashioned machines. Slightly better results are noticed with the stockings from the machines that are not equipped with a tension device.

Here again most trouble was encountered with slubs made by the yarn twisting on itself, particularly when yarn changes were made. This trouble is now so remote that irregulars from this source account for less than 0.5% of production.

The yarn is wound on a tube, and a hollow truncated-cone device made from plastic rests in the bore of the tube. Four filaments taken from a paint brush are glued at an angle to the inside of the device. The filaments protrude from the edge of the device and control the yarn to prevent kinks running back when the yarn stops running from the package.

The yarn balloon is controlled by a take-up bracket fixed to the yarn-stand upright. The bracket is adjusted to suit the yarn balloon.

The yarn then runs through a hollow tube to the porcelain and through an oil-jar wick to the needles. The object of these devices is to allow the yarn to pass to the needles with minimum tension under maximum control.

All Stockings Are Inspected on Forms

All stockings are inspected by the knitter as they are taken from the machine. The stockings are pulled over an upright rotating form fixed close to the knitting machines. Machines found to be producing irregular stockings are instantly stopped and flagged by hanging the irregular stockings on the machine.

A stretch test is given one stocking from each machine twice daily. Measurements are taken of the boot, welt, and foot and entered in a book for action to be taken if the measurements are out of permissible range.

The stretch-test machine is situated at the end of the knitting-machine line. The stocking is stretched over two arms, and a 10-lb. weight is applied to one arm. The arm raises a wire pointer against an upright measure fixed to the bench.

BOARDING is done after Dunn-System treatment on conventional forms. Usual times and temperatures are used.

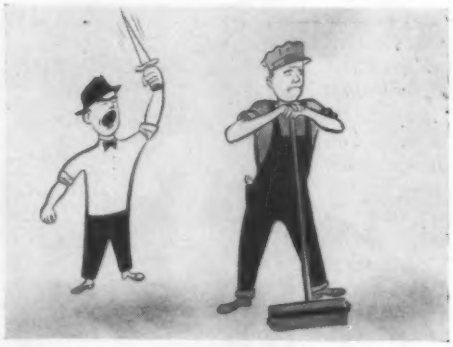
Mini-Lon stockings made from 15-den. yarn stretch 185% in the welt compared with a 50% stretch for 15-den. stockings of a plain construction and 100% for stockings made from super-twisted yarn.

How To Be a Supervisor

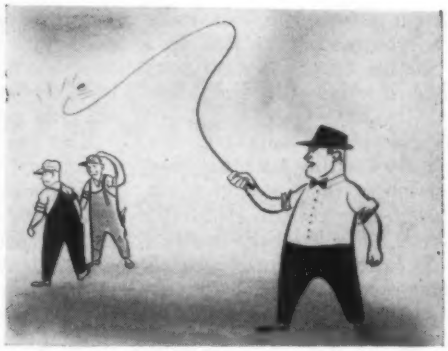
● In April, TEXTILE WORLD carried an article called "What Makes You Tick?". "How To Be A Supervisor" is a continuation. After you understand workers and yourself, you want to know what to do about it. The accompanying series of drawings and captions explains four basic supervisory skills and six qualities that supervisors should develop.

By THOMAS B. WINSTON

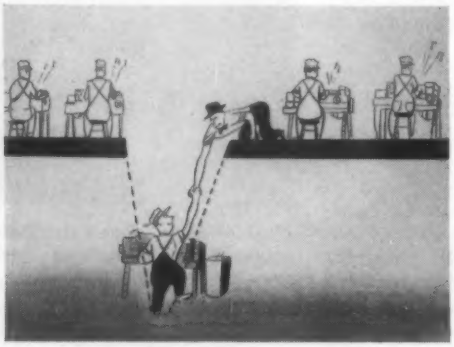
Supervisory Skills



DON'T COMMAND. Make requests instead. Your primary job is to get the best efforts from your workers, not to prove who is the boss. If you have respect for the dignity of workers, you think of them as fellow workers and not machines. Explain your requests. Ask for suggestions. Delegate authority.



YOU CAN'T ORDER COOPERATION. It must be earned. Cooperation is not secured with a verbal whip. Respect does not come from workers who are driven. To earn cooperation and respect, don't argue, and don't ridicule or run down workers. Patiently explain what you want done.

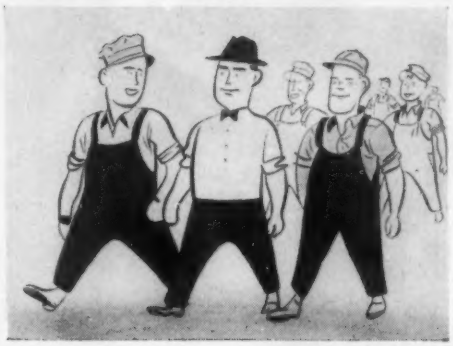


SHOW HOW TO IMPROVE. Workers want to be helped and they want to improve—but it's the way you offer help that's important. Don't lecture about mistakes: negative criticism lowers morale; arguments breed arguments. A worker resents an attack on his self-esteem.

USE EMPLOYEES' SUGGESTIONS. The job becomes more challenging if the worker feels free to offer suggestions. He has more interest in his work, and he will be on the lookout for ways to improve his performance. Also, he will think more about what others are doing, and he will feel more a part of the organization.

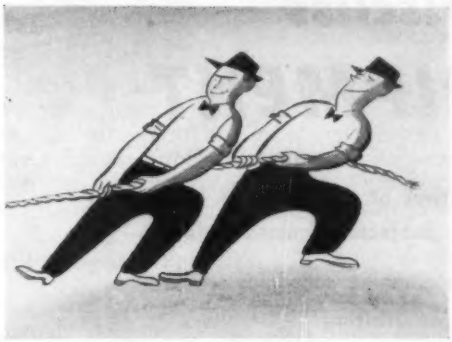
The information in this article was supplied by Dr. Nathaniel Cantor, Human Relations for Industry, Buffalo, N. Y. The illustrations are panels from a film-strip series put out by that company for use in industrial training programs.

Acting as Part of Management

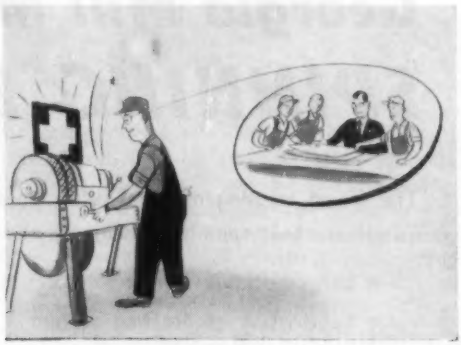


ACT LIKE A LEADER. Your attitude and spirit determine the reactions of workers to management. You are a good leader if you have developed a spirit of cooperation, if you have won the confidence of employees, if you encourage initiative, and if you are fair and reliable.

YOUR AUTHORITY CANNOT BE IMPOSED. You have the responability and authority, and your workers know it. Bullying, double talk, and arbitrary orders are out. If you push workers around, they will find a way to get back at you. Resentment and hostility result in poor work and grievances.

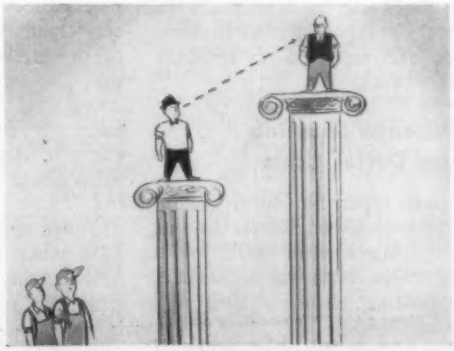


COOPERATE WITH OTHER SUPERVISORS. Your employees are influenced by your attitude toward your fellow supervisors. Don't criticize other supervisors in the presence of workers. Don't let departmental difference become a struggle for personal power. Exchange ideas with other supervisors.

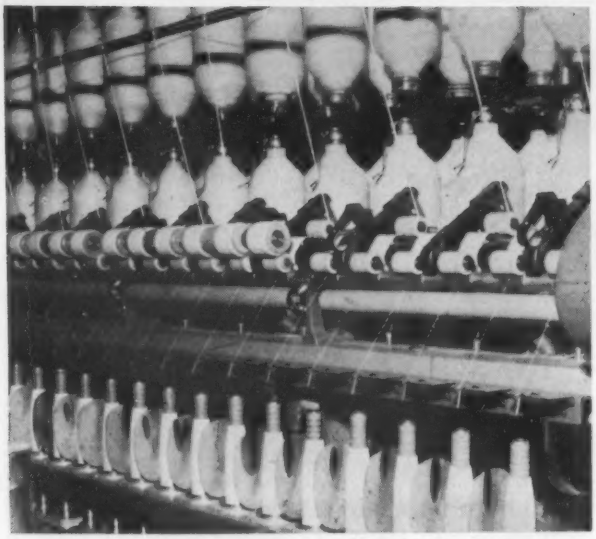


TREAT SAFETY AS AN ATTITUDE. Once mechanical hazards are removed, the important factor in safety is the workers' psychological attitude toward a safety rule. A rule has meaning only if the worker relates it to his own personal security. Ask him what he thinks of the rules. Invite suggestions.

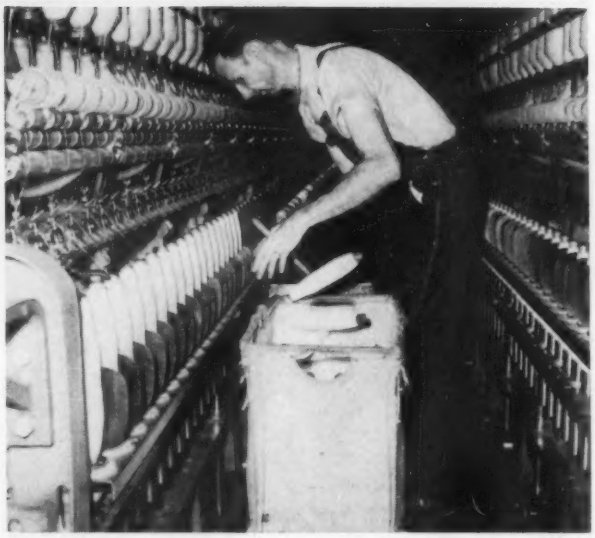
MAKE NEW WORKERS FEEL AT HOME. Confusion is created if a new worker doesn't know what is expected of him and if he doesn't know whom he is to work with, report to, and ask for help. Explain company rules and the job requirements. Don't just talk; concentrate on understanding.



SHOW RESPECT FOR YOUR SUPERIORS. Your relationship with your superiors affects the morale of your workers. Leaders set the tone in an organization; so try to create an atmosphere of respect and straightforwardness. Don't make secret agreements that involve your workers. Don't gossip.



SYNTHETIC TOP ROLLS are preferred by the majority of mills. Softer top rolls increased the break factor and decreased ends down.



CYCLE DOFFING is preferred by mills that produce few yarn numbers, while mills that have many different numbers prefer spot doffing.

Georgia Mill Men Discuss SPINNING EQUIPMENT

The spring meeting of the Textile Operating Executives of Georgia shed light on questions about spinning machinery and techniques. Subjects discussed included—

- **Large-package spinning**
- **Lubrication of drafting system**
- **Clip-type bobbin holders**
- **Underframe cleaning schedules**
- **Cycle vs. spot drafting**

THE FIRST QUESTION asked at the spinning session was about large-package spinning experience. Mills were asked to discuss the reason for choosing particular bobbins and spindles and their experience with them. The mills also reported on spinners' and doffers' workloads.

Large-Package Spinning Decreases Doffer Costs

Most mills reporting found a slight increase in ends down after changing to larger packages. Two mills found no change. One reported a decrease, but the drafting system at this mill was also changed.

Opinion about the advantages of using wood or paper bobbins was pretty evenly divided. One mill has been using paper bobbins for eight years, and these bobbins are now in fair condition. Another mill chose wooden bobbins because no adapters are required and paper bobbins get cut and damaged. This mill is now using aluminum bobbins satisfactorily.

Another mill prefers wood because paper tubes need expensive adapters and changes on the spooler conveyor to prevent telescoping. Still another mill prefers paper tubes that are non-corrugated with no ferrules at the ends. It found this type of tube easier to strip at the spooler, and the tube causes fewer ends down in doffing.

Power consumption decreased up to 25% when mills changed to antifriction bearings. Four mills find these spindles more difficult to plumb; however, one of the mills solved the difficulty by changing the rubber washers. One mill oils antifriction spindles once a year, and another oils once every six months. The latter cut the oiling of regular spindles from once every two weeks to once a week by using a spindle-oiling machine.

Spinners' workloads remained the same at most mills that installed large-package spinning. Doffers' loads were increased, however. One mill reported a 26% increase in frames that were assigned to the doffers. Another mill reported that the doffing cost per pound of yarn was cut almost in half. The lower doffer cost was attributed to the longer running time of the frame before doffing is required.

Newer Cleaners Do the Job

All mills reported that the new-type frame cleaners are keeping frames and floors clean. Yarn quality at one mill has been considerably improved. This mill has almost eliminated all cleaning except roll picking and underframe sweeping.

Another mill thinks that it will be able to reduce the frequency for wiping creels and backs and running out

guides about 50%; and when ball-bearing tension pulleys are installed, blowing-off should be reduced 33%. Spinner jobloads have been increased 18% at one of the mills. No mill reported operating or maintenance problems.

Here are some typical reports on underframe cleaning schedules:

Mill A: Clean under frames with compressed air. Blow each frame every 24 hrs. Five frames are stopped at a time for about 5 mins. each. One operator blows off frame, and two clean ends off and stop and start frames.

Mill C: ". . . On the frames that have underframe cleaners, we do no cleaning other than to blow the underframe cleaner itself three times weekly. We think we have fewer slubs. Both spinner and sweeper jobs have been increased, but other factors were also involved."

Mill E: "We do not have underframe cleaners. The section man blows off the frame once each 8 hrs., and the sweeper drags out every 3 to 8 hrs."

Mill V: Spinners do the underframe cleaning. They mop rails every 2 hrs.; clean ring rails, creel boards, and weights every 8 hrs.; clean base rails every 2 hrs.; and clean rockers every 8 hrs. Every 46 hrs. the frames are blown out with compressed air.

Pneumafil Increases Spindles

One mill using Pneumafil reported an increase of 50% in spindles per spinner. At this mill, the spinners do no cleaning. Another mill reported a 20 to 25% increase. In general, ends down were reported decreased.

Waste was reported higher on frames with Pneumafil. One mill, however, found the waste more reworkable. Another mill reported, "Waste will increase if not carefully controlled. Short tests have shown up to 75% more waste. It is more difficult to see an end down, and more careful inspection is required."

Drafting Results Vary

Here are some comparisons of drafting systems:

1. Biggest objection to Casablancas system is the general difficulty in cleaning and removing wads of waste from inside the aprons.

2. Although no comparison checks have been made, the Roth system is thought better for running heavy roving and coarse numbers and Casablancas for finer roving and finer yarn numbers.

3. In daily laboratory tests, Saco-Lowell Roth and Whitin Casablancas drafting systems do not show an appreciable difference. Standards department shows no difference in ends down on the two systems. The same roll drafts and speeds are run on comparable numbers on the two systems.

4. The Saco-Lowell Duo-Roth system has had better results than two other systems for warp yarn. Draft has been increased from 19.6 to 24.8, ends down have decreased about 24%, and break factor has increased from about 1,890 to 2,000 for 31s warp yarn.

5. Whitin T-2 drafting system produces 60s and finer numbers better than the Whitin W-2 system.

Prefer Synthetic Top Rolls

All mills except one are using synthetic top rolls. One prefers leather. Yarn strength has been generally increased by the use of softer synthetic rolls.

One mill had a slightly increased break factor with ends down decreased about 20%. Another mill found softer rolls gave a little evener yarn with a little higher break factor.

Another mill thinks that soft rolls have improved top-roll lapping in warp spinning and rayon filling spinning. Softer-cushion synthetic cots on the middle and front lines gave one mill stronger yarn with fewer ends down.

Buffing cycles run from 3 to 20 months. The minimum cover allowed before recovering the roll averages about $\frac{3}{32}$ in. The cushion allowed ranges from $\frac{1}{16}$ to 5/15 in.

Several mills reported trouble with flutes loading because of synthetic rolls. One mill solved the difficulty by using plush scavenger rolls. Another mill reports that synthetic rolls caused no additional loading of flutes.

Drafting Lubrication Reduced

Mills reported on their experience in reducing or eliminating oiling of the drafting system. Here are some findings that mills made:

1. Grease fittings were installed on each stand. Stands are greased every 24 hrs., top rolls picked every 24 hrs., and all front top rolls oiled every 24 hrs. Middle and back top rolls and steel rolls are oiled every 144 hrs. This practice is giving good results.

2. ". . . We would prefer ball-bearing front rolls and nylon nubs and bars for middle and back rolls."

3. "When permanent nebs with steel top-roll arbors in front were installed, cleaning cost was reduced 50% and oiling schedules were reduced from weekly to monthly."

4. "Our best results have been obtained with impregnated wooden bearings in the cap bars and saddles used in conjunction with steel top-roll arbors."

5. "We reduced our oiling of rolls and roll stands 60% by using a loaded oil on the regular cast-iron roll and finger-bar system. We didn't accomplish much with the top front roll."

Cycle vs. Spot Doffing

Mills running many different yarn numbers prefer spot doffing, while those running few numbers prefer cycle doffing.

However, one mill that produces many yarn numbers uses cycle doffing and reports:

Styles that have the same approximate running time are grouped, and enough frames of various styles are assigned to create a full-time job. However, when frames run together, the mill finds that it is sometimes necessary to short-doff.

No piece-rate allowance is made directly, but the rates are based on actual hanks run on any particular style.

Another mill has four doffers who doff in pairs on 63 frames. One set has 32 frames and the other 31. The average yarn number is 17. The frames are changed so that each set will have about the same average yarn number. Doffers get paid by the hank.

At another mill, the doffers work out their own method for doffing mixed jobs. However, it is believed less interference would result from the use of interference charts.

Most Mills Prefer Clip-Type Bobbin Holders

Most of the mills reporting found that clip-type bobbin holders make it easier to keep the frame clean. Here are some of the mills' experiences with this type of bobbin holder:

1. The spinners like the clips. They are obviously a labor- and time-saver. If the clips are kept in good condition, they should have no effect on ends down. Choked, they will definitely increase roving breaks back of the roving traverse. Since two narrow strips of wood support the bottom line of roving instead of the solid shelf, air from the blowers is allowed to circulate more freely.

2. The maintenance of clip-type bobbins offset any savings. They choke up and require disassembling to remove the cotton. When roving gets down to two or three layers, frequently the roving will break back.

3. Clip-type bobbin holders are more easily cleaned than skewers and creel boards. Less roving stretch results in fewer ends down. Clips are cleaned once a week by regular clean-off hands.

LOADING SKEINS directly from the factory package is a quick job. In 5 mins., 400 lbs. of yarn can be placed on the dyeing-machine spindles.

How Brawer Bros. SKEIN-DYES Yarn

Brawer Bros. Silk Co.'s Empire plant produces several types of skein-dyed yarn on a Smith-Drum Cascade machine. By keeping dyeing time short and handling to a minimum, the mill—

- **Keeps production high**
- **Produces yarns that handle easily in further processing**

By **ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

MATCHING SHADES quickly is of double value when you're dyeing yarn in skeins. Skillful, fast dyeing keeps production up and also cuts down the chances of getting tangled yarn that is hard to rewind.

At Empire, the bulk of production is 150-den. 2½-turn bright rayon, thick-and-thin acetate, nylon, and crystal acetate yarns. The latter is a special yarn of high luster used for expensive dress fabrics. A great deal of the rayon yarn goes into ribbons that are used by florists.

Acetate yarn is received on 4-lb. cones, and it is skeined off into 6-oz. skeins and leased to prepare it for dyeing.

A normal load of acetate yarn for the Smith-Drum machine is 400 lbs., but smaller lots can be dyed by using

DYE LIQUOR is just starting to flood through the skeins at this point. Skeins are shifted by an arm that makes one revolution at 1-min. intervals.

HYDRO-EXTRACTING in a centrifuge precedes drying. Careful packing of the skeins is necessary to prevent shifting of the yarn. To complete drying, the yarn is hung on poles in a heated chamber.

only a section of the machine. The first operation is wetting out, helped by the addition of 1% Congojell to the dyebath. After the liquor is pumped through the skeins for 15 mins. at 140° F., the skeins are ready for the dye.

Finish Goes in Dyebath

In the same bath, 10 lbs. of Levelene and 5 lbs. of an antistatic finish such as Albatex POX are added along with the necessary acetate dyes. The temperature is run up to 185° F., liquor is pumped through the skeins for 35 mins., and the first sample is taken. If more dye is needed, it is added; and the lot is checked again within 30 mins.

Generally, if the formula is a good one, the shade is matched within an hour's total dyeing time. Care is taken not to let the shade become too deep; if the yarn has to be boiled down to reduce the shade, rewinding is practically impossible and the lot is lost.

The skeins are unloaded from the machine and packed carefully in an extractor where excess water is removed. The hanks are dried on long poles hung in a heated drying cabinet.

Rayon is received at the plant already skeined, and loads up to 460 lbs. are usually dyed. Wetting out is almost instantaneous with rayon; so no extra time is allotted for that purpose. The dyebath contains 1% of Nacconal, based on yarn weight. As the liquor is being heated to 160° F., it is pumped through the skeins. At 160° F., the dye is added and circulated for 15 mins., and the lot is checked for shade.

Well-established formulas usually require nothing but an addition of salt at this point. After another 15-min. period, a sample is taken. In many cases, the shade will then be matched; but if not, further salt or dye is added. One more check after an additional 15-min. period usually completes the dyeing. Avitex SF is added directly to the dyebath to give a soft finish to the yarn. Empire averages one load per hour of dyed rayon skeins.

In dyeing Bemberg yarn, the dyebath containing 1% Congojell is run up to 170° F. before the dye is added. Except in unusual cases, no further heat is applied and dyeing is carried on at 160° F. After 8 mins. in color, a sample is taken and then salt is added if necessary. After another 15 mins., the lot is checked for shade and is generally a match at that time.

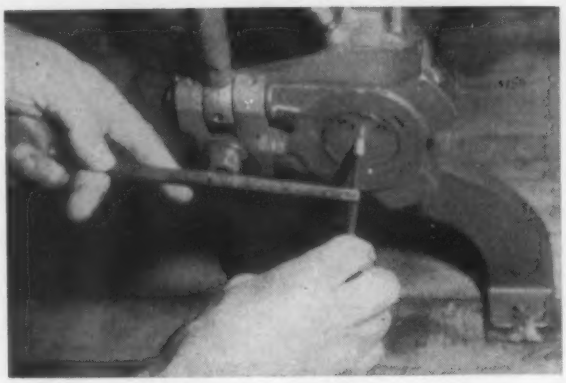
Nylon yarns of 75, 150, and 200 den. are the usual types handled at Empire. Dyeing loads are kept to 400 lbs. A wetting-out period of 4 to 5 mins. at 140° F. in a bath containing 1.5% Peregal O is the first step; then neutral-dyeing dyes such as the Cibalans are added and the temperature run up to 190 to 200° F. and maintained at this point during the dyeing.

Nylon Dyeing Takes Longer

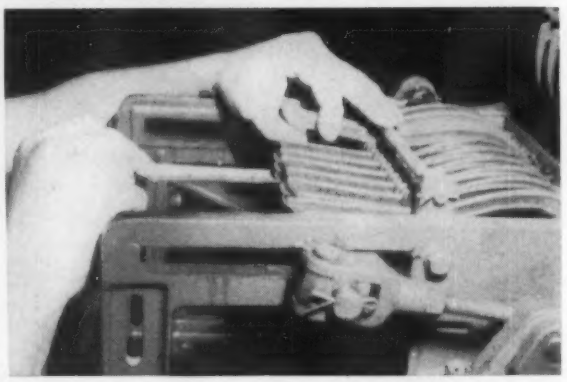
Because nylon takes dye slowly, dyeing time is upwards of 2 hrs. To boost some shades, acetic or formic acid may be added in small amounts. An antistatic finish such as Geranine HC is added during the latter part of the dyeing period.

Successful skein dyeing of any type of yarn depends largely on two factors: machinery that will distribute the dye solutions evenly through the skeins with a minimum of yarn disturbance, and dyeing techniques geared up to fast, accurate shade matching. There is little leeway for reboiling, or touching up, because overworked yarn becomes difficult or even impossible to rewind.

There are four main steps in setting a dobby:



Step 1. SET THE DOBBY-DRIVE crank bolt so its center is 3⅛ ins. from the center of the camshaft.



Step 2. SET THE DOBBY KNIVES, top and bottom, 3/16 to ¼ in. from the top and bottom hooks.

CHECK and SET DOBBIES
This Fast, Sure-Fire Way

▶ **These one-two-three methods make checking and setting dobbies easy. The methods are fitted to Crompton & Knowles S-6 looms, but settings for XD looms and older models are little different.**

By W. R. CALLAWAY

SINCE THE QUALITY of fabrics woven on dobby-equipped looms depends to a great extent on the correct operation of the dobby, the dobby should always be kept in good mechanical condition and set and timed exactly right.

There Are Two Basic Settings

The type of fabric being woven determines how the dobby must be set; there are two basic settings, one for dobby weaves and one for plain weaves such as taffeta that tend to make set marks. Set marks are made primarily because one shed is tighter than the other when the loom is stopped. A dobby set correctly for the plain weave, with proper whip-roll settings, does much to eliminate the set marks.

To put the dobby in good mechanical condition, first check and correct the dobby parts that determine the position of the bottom warp shed. Four items determine the position:

1. Top and bottom girders
2. Jack pin
3. Jack backs
4. Dobby jacks

Then, check the parts that control the general condition of the dobby. Check:

1. Hooks, dobby needles, and index fingers (cylinder fingers)
2. Dobby knives
3. Knife connectors, swivels, connector heads, and pins for swivels
4. Dobby-drive connector, top and bottom swivels, pins, and bushing
5. Dobby jacks for tightness. When dobby jacks are set right, one jack will not fall from its own weight. However, when two jacks are released together, they will fall. Jacks too loose or too tight cause trouble.

Basic Weave No. 1— Dobby Weaves

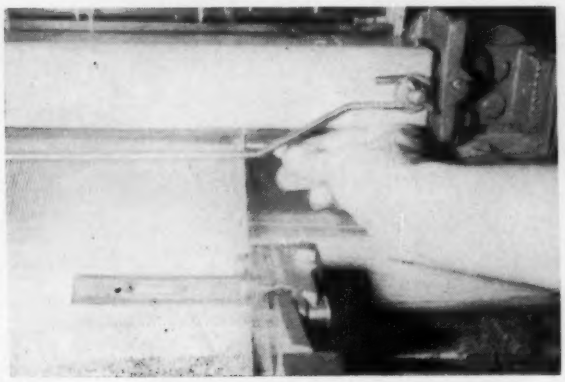
To set the dobby correctly, easily, and quickly for a dobby weave:

1. Position the bolt in the dobby-drive crank so that the distance from its center to the center of the bottom shaft (camshaft) is 3⅛ ins.

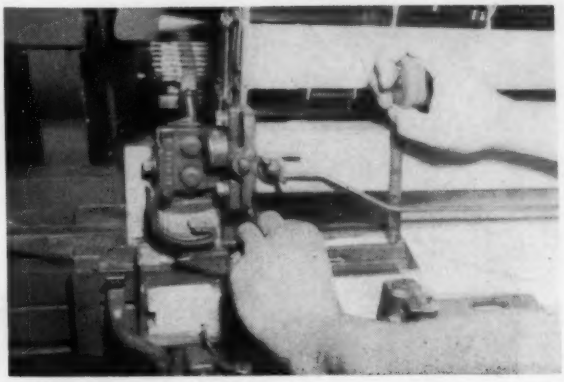
2. With the lay on back center, adjust the connector heads on the knife connectors so that the top dobby knife is $\frac{1}{16}$ to $\frac{1}{4}$ in. from the hooks. Be sure the knife is the same distance from the front and back hooks.

3. Turn the loom over by hand and set the bottom knife the same way. Then turn the loom over by hand a couple of times to be sure the dobby knives do not hit either end of the slots in the dobby sides.

4. Position the first two jack eyes of the leader wires (harness wires) in



Step 3. DIVIDE THE DOBBY by adjusting the dobby-drive crank so that both sheds touch the marked reed.



Step 4. CHECK THE WARP SHED to the shuttle. This distance is ¼ in. if the dobby is set right.

the first notch at the bottom of the first two dobby jacks. Position the next two jack eyes in the second notch, and continue to go up a notch for each two jack eyes for each two harnesses.

With these settings, the top shed of the warp will clear the front wall of the shuttle ¼ in. when the lay is at back center.

5. The timing of harness crossing varies with the fabric being woven, but the dobby-drive crank at the bottom shaft should be set so that the harnesses cross with the lay at front center until the dobby and harnesses have been set; then the harness crossing can be retimed if necessary.

6. Adjust the harnesses to the lay. Make the preliminary setting by turning the handwheel to level the jacks, and stop when the jacks cross. Set the harnesses level, and the necessary slant will be in the harnesses at the back-center position because the jack eyes have been staggered.

Move the lay to back center, and raise or lower the harness sheaves with the wing nuts until the bottom shed clears the race-plate cover by $\frac{1}{16}$ in. Always keep the harness sheaves level; when they are raised or lowered at the front, move them the same amount at the back.

The Test —Is the Dobby Divided?

7. Mark the reed with a pencil or chalk at the position of the top shed to see if the dobby is divided. Then turn the lay over to check the other shed. If the dobby is divided properly, both sheds will touch the same mark. The shed will be ¼ in. above the shuttle if all settings have been made correctly.

If the shed is not equal or high enough, it must be divided.

8. Divide the dobby by making one of three settings:

a. Adjust the connector heads on the dobby knives.

b. Adjust the dobby-drive crank.

c. Adjust both the dobby-drive crank and the connector heads on the knives, if necessary.

The minimum clearance between the dobby knives and hooks is ⅛ in.; the maximum clearance is ¼ in. With these settings, it is okay for one knife to be closer to one set of hooks than the other.

If the dobby is divided properly, the distance from the reed to the breastbeam will be the same when the shuttle is thrown from one end of the lay to the other and the harnesses leveled in each position.

9. Set the pattern-chain cylinder. To make the settings:

a. Remove the pattern chain from the cylinder, and set the bottom and top hooks ¼ in. above the dobby knives. Before resetting the top hooks, check the dobby needles and the bottom side of the hooks for wear.

Always remove hooks from the jack backs with a screwdriver to straighten them; and to straighten them, bend them with a hammer.

b. Adjust the cylinder-finger rack and the pattern-chain cylinder so that the cylinder fingers will just clear the chain cylinder. Be sure the cylinder fingers are clean and working freely and that the pattern-chain pegs are not wearing or cutting them on the bottom.

Timing—An Easy Adjustment

Time the pattern-chain cylinder to start turning at the exact time the bottom knife starts moving toward the loom.

To time the cylinder, (1) put the lay on back center with both shuttles in the head end of the loom, (2) set the dobby-drive crank on the bottom shaft pointing straight down, and (3) adjust the sprocket on the crankshaft so that the second tooth of the worm is on the center of the worm-gear teeth on little S-6 looms. On big S-6 looms, the worm has a single tooth; so set the sprocket so the flat side of the shoulder of the worm is level on the bottom side.

When these settings are made correctly, the dobby pegs in the pattern-chain bar under the index fingers are straight up. If the pegs are not straight up, loosen the setscrew on the pattern-chain cylinder shaft, and turn it slightly.

Basic Weave No. 2— Plain Weaves

To prevent set marks, settings for dobbies on taffeta or other plain weaves are somewhat different from settings on dobby weaves. When a dobby is set for a plain weave with the ¼-in. clearance between the hooks and the knives, the top shed starts moving down before the bottom shed

CONTINUED ON PAGE 170

CONTINUOUS-ROW FLUORESCENT LIGHTING eliminates dark spots prevalent with shorter tubes. Walls of glazed tile reflect light and eliminate painting needs.

New WORSTED-YARN Mill Swings Into Production

Late in 1954, Runnymede Corp., part of Kent Mfg. Co., moved its operations from Pennsylvania to Pickens, S. C. Equipment was moved intact, even the 55-ft.-long spinning frames. Here are some highlights of the new building—

- **Glazed tile walls increase visibility and eliminate painting needs**
- **An automatic boiler requires practically no care and burns all grades of oil**
- **Continuous-row lighting eliminates dark spots**

By MICHAEL LONDON, Assistant Editor, TEXTILE WORLD

THE new air-conditioned windowless building on the outskirts of Pickens, S. C., houses an industry new to the area—French-system worsted spinning. Completed late in 1954, the building is the result of a transfer South of one of the mills of Kent Mfg. Co., Clifton Heights, Pa.

The building, a one-story unit built on a sandstone base, encompasses 55,000 sq. ft. The roof is a precast concrete slab construction, and the walls are made from jumbo brick. Inside the mill, glazed tile walls 4 ins. thick form a structural part of the building. The walls reflect light; so visibility is increased. Since the tile is cleaned easily and requires no painting, maintenance costs are practically negligible. Long, continuous fluorescent tubes furnish the lighting and eliminate dark spots.

Two penthouses, made double size to allow for future expansion, condition the air. Refrigerated air keeps conditions at a constant 80° F. and 65% r.h.

There are no partitions between the manufacturing areas. Off the storage section are a small vending-machine lunch room, a laboratory, a machine shop, and the boiler room.

Boiler Burns Low-Cost Fuel

A new automatic boiler, which requires practically no care, is the responsibility of the master mechanic, who with his helper also takes care of the air-conditioning system. The boiler is a Kewanee-Iron Fireman boiler-burner unit that operates at 725 lbs. of working pressure. The

steam generator can burn any grade of oil without requiring a change of the burner. Runnymede uses a low-cost fuel. The boiler, completely automatic, has a 2-sec. safety shutdown when the controls or flame fail; signal lights indicate the cause of the shutdown. The boiler also modulates automatically to increase and decrease the flame as the pressure varies.

The machine shop contains a lathe, drill press, power hacksaw, grinder, electric and gas welding equipment, cot-buffing machine, and arbor press.

There is no need for the full-time painter, carpenter, and pipefitter required at the old plant. The master mechanic and his helper are the only personnel required for building maintenance.

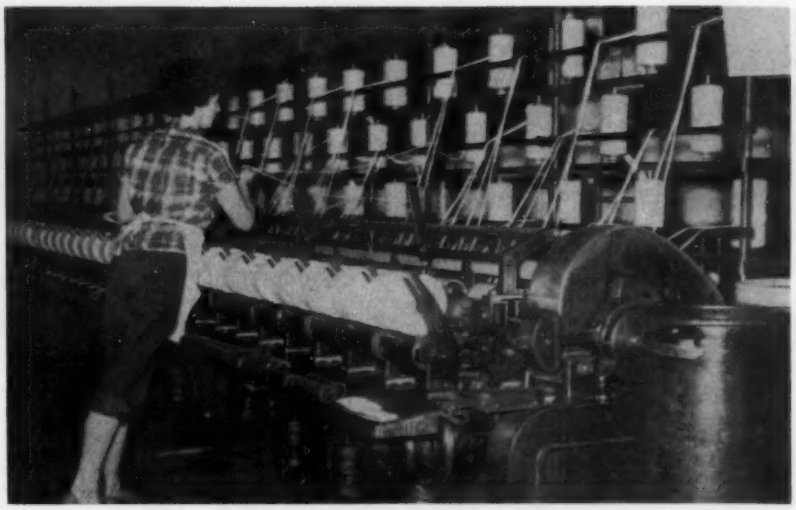
A shipping platform conveniently close to the shipping and storage areas can accommodate three trailers.

When the mill was ready to begin operations, four key men were sent down from the Pennsylvania plant to train operators. The training program started with a nucleus of two or three easily adaptable operators for each operation. They learned through demonstrations and practice until they mastered their jobs. Then new operators learned their jobs by associating with the personnel in the nucleus. The mill is set up to employ 150 to 200 people on three shifts.

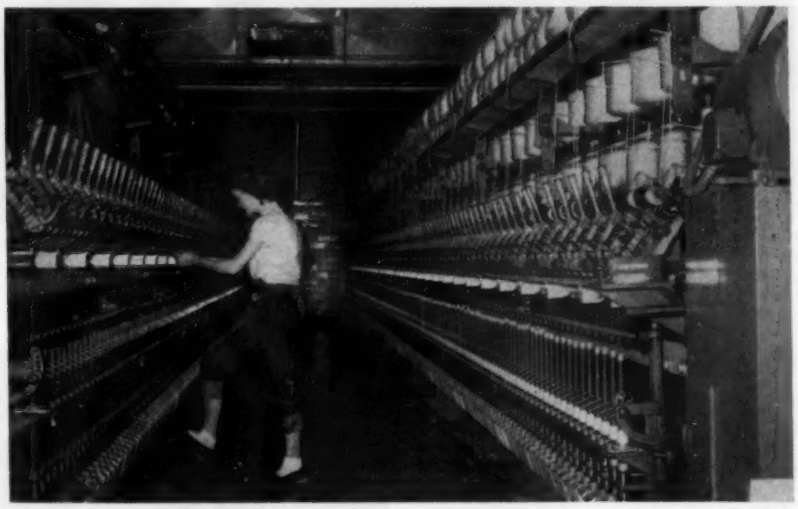
Equipment Moved Intact

The bulk of the equipment at the Pickens mill was moved from the Pennsylvania location by Turner Transfer Co., Greensboro, N. C. No equipment was disassembled for shipment. Even the 55-ft. spinning frames weighing 20 tons were removed through the windows of the old plant and shipped South intact. It took only a week for each frame to be put into operation, and this time included an overhauling for each frame.

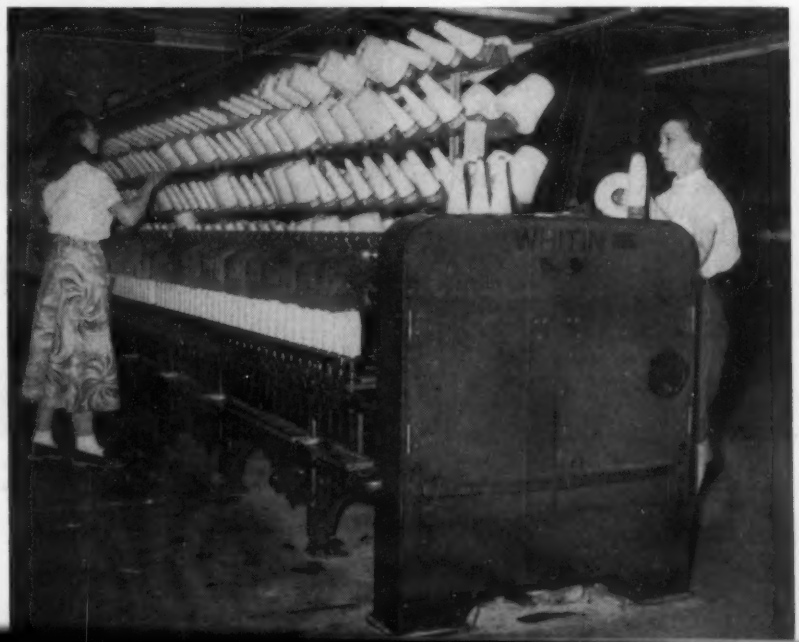
Instead of being bolted, the machinery is cemented to the floor through compressed felt pads. Each side of the pad was coated with $\frac{1}{32}$ in. of plastic cement and the pad fixed on the floor. Each leg of the machine was placed on the felt. Even the longest machines were secured in this manner. This method kept the floors from being marred and saved Runnymede weeks of work. Another advantage of gluing is the ease of mov-



FRENCH DRAWING consists of reducing, roving, and finishing operations. The Runnymede mill produces worsted yarn from 1/12s to 1/60s, both single and ply.

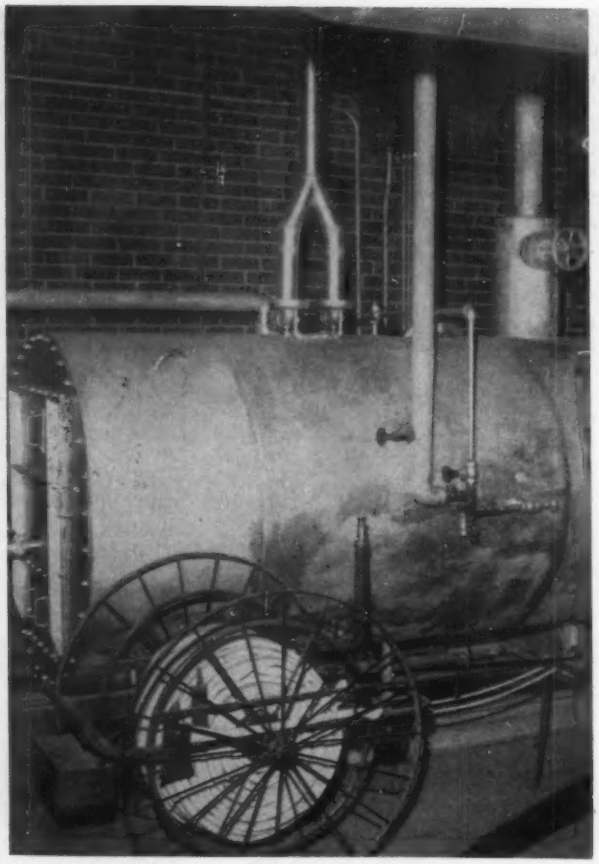


FRENCH SPINNING FRAMES have individual drives on each side that allow two different yarns to be produced on one frame. Conditions are kept at a constant 80° F. and 65% r.h.



TWISTERS include 10 Whitin frames. All equipment is secured to the floor by compressed felt pads and plastic cement instead of being bolted.

FIDELITY REELS put up the yarn in skein form. Yarn, also packaged on cones, is used by Kent and sold as sales yarn.



AUTOMATIC BOILER requires a minimum of care. The boiler burns any grade of oil and modulates the flame as the pressure varies.

ing machinery when necessary.

Here's the Equipment—

Equipment at the Pickens plant is as follows:

A sample set of French-system machinery

Three pin drafting, French reducer, French rover, and French finishing operations

Ten McGlynn-Hays French spinning frames with 4,000 spindles. Each frame has an individual drive on each side; so it is possible to produce a different yarn on each side of the frame.

Three Foster No. 102 winders

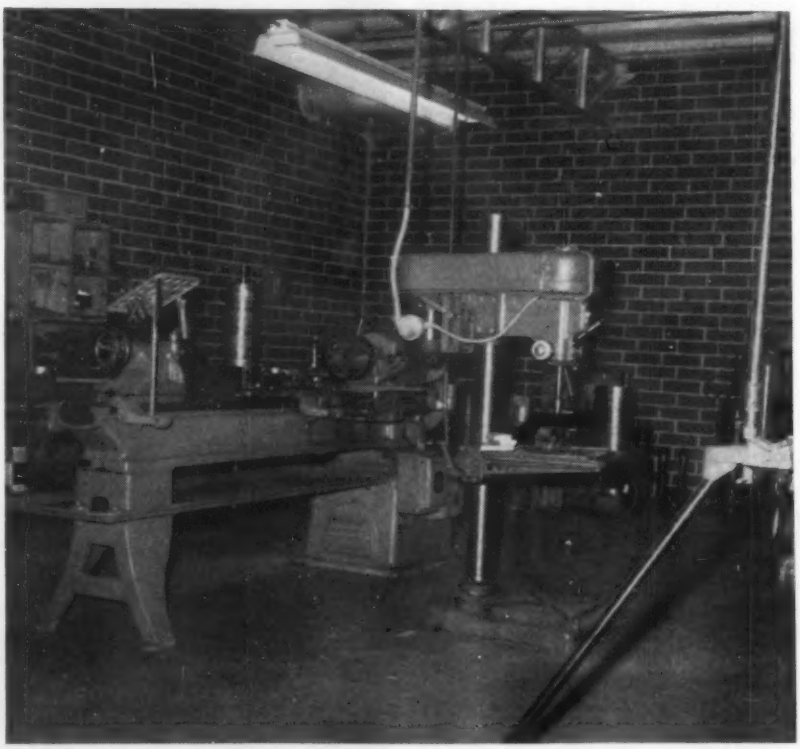
Two Abbott winders

Ten Whitin twisters

Fidelity reels

One Whitin Quick-Set roving frame, an American-system machine being used experimentally

The Pickens mill manufactures yarn for Kent's weaving operations and sales yarn for weaving and knitting mills. Stocks used are 64s grade or better, and the mill produces yarn numbers from 1½s to 160s, both single and ply. A variety of yarn numbers are also produced for novelty twisting. Yarn is packaged on cones and skeins.



MACHINE SHOP includes a lathe, drill press, power hacksaw, grinder, cot-buffing machine, arbor press, and electric and gas welding equipment.

For Good Yarn Dyeing, Control PACKAGE WINDING

- **The most important point in winding for yarn dyeing is the control of package density through winding-tension control. Accurate use of density formulas helps.**
- **Here are tips on winding cotton cheeses, Barber-Colman cheeses, synthetics packages, cotton beams, flyer bobbins, rayon cakes, and wool packages.**

CONTROLLED DENSITY through tension control in package forming is the most important phase of yarn dyeing. And it is impossible to use one condition of density to cover all yarns that are processed.

1. Cotton

A rule of thumb that has generally proved satisfactory on packages wound with a 6-in. traverse on 6¾-in. perforated tubes or dye springs is that ⅝ or 1⅝ ins. of wind is 20 to 24 oz. in net dry weight, wound to approximately a 5-in. dia. This basis is for spacing spindles on a carrier. A parallel wind is not desired; it generally permits channeling and uneven dyeing, and the rewinding usually results in waste.

A cross wind is much better. It offers resistance to flow, which is necessary for uniform dispersal of the dye in solution. A cross wind is more adaptable for single or ply yarn regardless of the yarn number.

It is important to maintain tension control reasonably well throughout the packages treated in an individual bath. Because of the variety of cotton yarns and the variety of dyeing—direct, developed, and vat—a widened range of performance of centrifugal-pump impellers, within certain limits, will overcome deficiencies.

The head pressure and flow developed by the pump must overcome the resistance of the wound yarn so that the flow moves evenly. A surplus of flow is needed to provide a cushion behind the flow that penetrates the package. So a wider range of impeller performance is desirable.

The wind on the package corners must be relieved; the corner is usually mechanically cupped or hand-broken before dyeing. This hardness is caused when the yarn changes direction in winding, and it can be troublesome.

The proper density, which is a result of winding control, is essential for economically and satisfactorily pressure-extracting the free moisture and for drying the wound package with heated air. If the package is too loosely wound, it does not extract or dry well; the leaving air is too low in relative humidity, and this condition adds to operating time and should be considered wasted time.

A specific formula for expressing density is:

$$\text{Cheese weight} = \text{winding density} \times (\text{cheese volume} - \text{tube volume})$$

$$\text{Winding density} = \frac{\text{cheese weight} - \text{tube weight}}{\text{cheese volume} - \text{tube volume}}$$

This formula is based on the net dry weight of the yarn, and it is the most accurate means of determining density in a precise form.

2. Barber-Colman Cheeses

The density of wind on a Barber-Colman cheese is more exacting for dyeing, pressure-extracting, and drying. Our experience has been that a cheese with a density of 410 grams per liter is suitable. A 410-gram density is best for all three phases, but it might not be best for any single phase. At 3 lbs. pressure in extraction, a Barber-Colman package will short-circuit because of its lower height and diameter.

A cheese wound to 200 mm. (7.9 ins.) and 80 mm. (3.15 ins.) in height, weighing 913 grams (32 oz.), can be satisfactorily dyed with 10 liters per pound (2.64 gals. per min.). With the correct pressure and air volume, this cheese can be pressure-extracted for 30 mins. and dried in 2 hrs. at the proper temperature.

It is advisable to use end plates on the individual cheese to prevent short-circuiting of liquor and air flow in the dyeing and drying cycles. The diameter of the plates should be in relation to the total diameter of the finished-wound Barber-Colman cheese.

3. Synthetic Yarns in Package Form

Precision winders are highly useful in this work. In winding on 1⅝-in. perforated tubes with knitted stockings, the yarn on the package should not exceed 1 lb. in net dry weight and 4¾ ins. in wound diameter. In this work, dye springs have proved highly unsatisfactory. (Dye springs will not long continue to be used with cotton packages; they are now used only to overcome deficiencies in tension control and rewind waste.)

In dyeing, the head pressure is higher than for cotton packages, but a flow cushion is highly desirable. Perforated end plates on individual packages will prevent blow-outs and deformation of the package in drying. We prefer to process synthetic yarns in the horizontal position, with a basic tension control of approximately 7½ inside and 4 outside. In our opinion, the Durometer type of control instrument has too many variables.

4. Cotton Beams

Generally speaking, cotton-beam dyeing has been unsatisfactory because of the use of winders with unsatisfactory tension control. But if modern beam winders are in use, with the density controlled, satisfactory results are obtained.

There has been much discussion of flow meters in this field; but the use of a variable-speed motor with the pump, in conjunction with an ammeter, answers the same purpose. With a high-speed centrifugal beam extractor, we can bring the moisture content, in relation to dry weight of the yarn, down to approximately 35% in a short time. A better-conditioned yarn is provided for the slasher.

5. Flyer Bobbins

The density of the flyer bobbin must be in proportion to the ability of the yarn to hold its structure. In dyeing, it is important to use conical cups at each end of the individual bobbin; otherwise, the shallower end of the bobbin permits channeling, which results in a poorly dyed bobbin. These conical cups must be fitted under pressure and follow the contour of the conical ends of the bobbins.

CONTINUED ON PAGE 170

Adapted from a paper presented by Maxwell F. Morris, Standard Fabricators, Inc., to the American Society of Mechanical Engineers

At the Chicago MATERIALS-HANDLING Show—

● Over 200 exhibitors showed equipment in the Sixth Annual National Materials-Handling Show in Chicago in May. Much of the equipment is already being used or will easily fit into materials-handling systems in textile plants.

● In many exhibitors' booths, several handling systems were joined together to move products automatically without manpower. The items shown here are easily adaptable to textile-mill materials handling.

Materials-Handling Equipment and Supplies

Fiberglas Trucks

Fiberglas truck bodies framed with metal tubing being used in textile mills were shown by G. B. Lewis Co., Watertown, Wis. They're being used to handle yarn in every processing department.

The manufacturer says the trucks will not warp when they're cleaned with hot water and steam. They aren't affected by oil or most chemicals. The interior surface has no rivets or exposed seams and provides a smooth snagproof surface to protect the yarn. The containers can be provided with skids in place of casters. And you can receive them already put together, or you can assemble them in your own plant. **(A-1)**

Fiberglas Tray

Molded Fiberglas trays suitable for handling filling at looms, for use as laboratory trays, and for other textile uses were shown by Molded Fiberglass Tray Co., Linesville, Pa. **(A-2)**

►New shapes in fibre containers for waste yarn were shown by Spaulding Fibre Co., Inc., Dover, N. H. The boxes were shown in half-round, rectangular, and 90° cone shapes. **(A-3)**

►All-steel pallets with self-supporting standards that lock in upright positions and fold flat when they're stored were shown by Elizabeth Iron Works, Inc., Elizabeth, N. J. The pallet stackers are made in several sizes. **(A-4)**

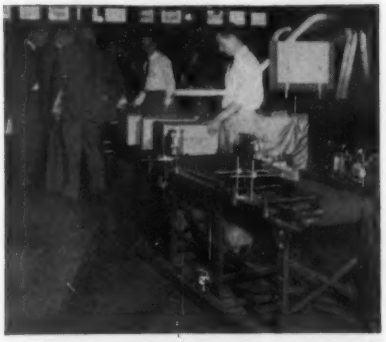
►A little gadget added to fork-lift trucks makes handling oil drums easy and fast. The tool, Lift-O-Matic, was made by Marvel Industries Inc., Evanston, Ill. It fits all lift trucks, handles all sizes of drums, and stacks the drums without pallets. **(A-5)**

TO REQUEST FURTHER INFORMATION on any item described in this review, please use the Reader-Service card on p. 155. Refer to the number following each description.

Vacuum Lifting

A quick-lifting device, Vac-U-Lift, was shown by International Staple & Machine Co., Herrin, Ill. The device operates on the vacuum principle and employs pads to grip any nonporous surface. It lifts steel plates, large castings, cement, drums, paper cartons, and other items.

The pads are made in several sizes and can be used on hoists, fork lift trucks, and cranes. A hand-operated model is made for lifting lightweight boxes and packages. (A-6)



Conveyor and Printer

To cut your inventory of printed boxes, you can use the combination multiple printer and power conveyor shown by Algene Marking Equipment Co., Garfield, N. J. The device is fully automatic, and the over-all length of both pieces of equipment is 6 ft.

The printer is furnished with one to four heads to print up to four sides of a carton in several colors as it's packaged. The printing area is 3x8 ins. The conveyor is powered by a ½- or ¾-hp. gear motor. (A-7)

► A heavy-duty version of a small electric hoist, Lodestar, was shown by Columbus-McKinnon Chain Corp., Tonawanda, N. Y. The hoist has a built-in safety device that prevents the mechanism from moving when it's overloaded. The hoist is built in ⅛- to 1-ton capacity. The ¼-ton model weighs only 51 lbs. The device is equipped with life-time sealed-in lubrication. (A-8)

► A manually operated hoist was shown by Griphoist, Inc., San Francisco, Calif. The device uses a ½-in. wire rope of unlimited length and combines the qualities of a winch-and-chain hoist. A crank-and-lever mechanism actuates two pairs of steel jaws that alternately grip and pull the cable. To use the hoist, you move an extension to the lever. (A-9)

Flexible Conveyor Idler

A conveyor idler that shapes itself to the load carried was demonstrated on a conveyor system by Joy Mfg. Co., Pittsburgh, Pa. Other advantages of the idler are: (1) it cushions and guides the belt; (2) there are only two bearings, and they are up out of the dirt zone; (3) it resists corrosion, abrasion, and flame; and (4) it weighs less than steel idlers.

The lightweight idlers, stands, and sections are easily and quickly put together, taken apart, and moved. (A-10)

► Lightweight molded Fiberglas stock boxes were shown by Molded Fiberglass Tray Co., Linesville, Pa. The manufacturer says you can't bend them and you can't dent them. They're also smooth and won't splinter. To clean the boxes, you just dip them in hot water or spray them with steam. One size is made for holding filling on looms. (A-11)

► Several types of lightweight fibre boxes for yarn-handling in various processes were shown by Spaulding Fibre Co., Inc., Dover, N. H. The boxes are made in any desired size. (A-12)

18-In. Drawing Cans

Three models of 18-in. fibre drawing cans were shown by National Vulcanized Fibre Co., Wilmington, Del. One model has an insert metal rim, one has a turned fibre top, and the other has a regular metal top. The cans are 36 or 42 ins. tall.

Several fibre boxes, yarn trucks, doffing trucks, and yarn trays were also shown in new designs. (A-13)

► Three models of rotary liquid pumps were shown by The New York Air Brake Co., New York, N. Y. All working parts and bearings are lubricated by the liquid pumped. The pumps are furnished in either plain or steam-jacketed construction for pumping materials that flow when they're heated but are solid when cold. Textile applications are slashers and dyeing equipment. (A-14)

Roller Skid Dolly

A dolly for moving heavy machinery was shown by Stokvis Edera & Co., Inc., Port Washington, N. Y. The dolly has caterpillar endless roller chains that provide forward, reverse, and turning motions. Small and large sizes are made. The large size has the capacity for moving 300 tons per pair.

The manufacturer recommends that the units be used in pairs by applying fork-truck power for moving machinery or equipment. (A-15)

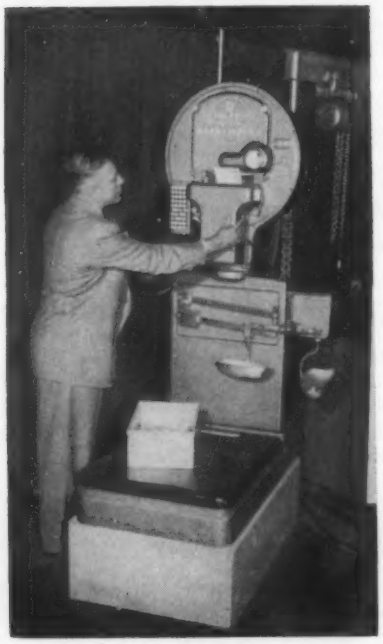
CONTINUED ON PAGE 190

For more information, circle the A-number on Reader-Service post card.

Power Strapping Machine

A power strapping machine for rapid strapping of production-line packages was shown by Signode Steel Strapping Co., Chicago, Ill. The machine is 32 to 34 ins. wide, 52 ins. long, and 31 ins. high. It weighs 880 lbs. The machine uses either wire or strapping.

The features include: (1) uniformly strapped packages, (2) selected strap tension, (3) it fits into existing conveyor lines and permits setting up a centralized flow of materials, and (4) there's no operator fatigue and resulting loss in packaging time since the machine does all the work. **(A-16)**

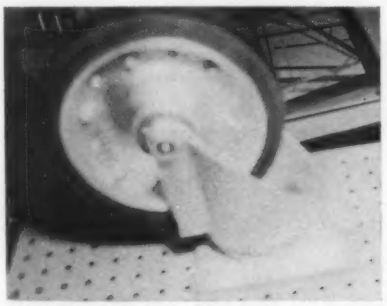


Printing-Weighing Scale

A portable scale equipped with an attachment for printing information on cards as items are weighed was demonstrated by Toledo Scale Co., Toledo, Ohio. Thus, a record of all material weighed is made right at the scale. Weighing capacities range from 125 to 2,000 lbs. The counting capacity is 2,500 lbs. **(A-17)**

► An air-operated portable stapler was demonstrated by International Staple & Machine Co., Herrin, Ill. The machine operates at 50 psi. air pressure, and no electrical connections are necessary. It's made to close cartons quickly and can be moved to any section of a room with ease **(A-18)**

► A portable machine for stitching closed the ends of cloth or paper bags was shown by Dave Fichbein Co., Minneapolis, Minn. Textile applications include stitching rolls of fabric together. The manufacturer points out, however, that the machine cannot be used where an absolutely straight seam is demanded. **(A-19)**



Casters

Heavy-duty casters with replaceable rubber tires, semi-steel wheels, and plastic wheels were shown by Wil-Mat Corp., Charlotte, N. C. All wheels are made in 6- and 8-in. diameters and have ring and thrust ball bearings. The swivel fork is a heavy-gauge one-piece stamping with a double-ball race for long life and easy swiveling action. **(A-20)**

► Sectional shelves of steel that are set one on top of the other were shown by Stackbin Corp., Pawtucket, R. I. If you need extra shelf and bin compartments, you just place extra Stackshelves on top of the ones already in use. **(A-21)**

► A build-it-yourself packaged underhung crane assembly was shown by Conco Engineering Works, Mendota, Ill. The package is complete except for the bridge I-beam, and you're supposed to get the I-beam from your local steel warehouse. The capacities of the cranes furnished are ½ to 1 ton. The package includes detailed assembly instructions. No special tools are needed for assembly or installation. Either a hand chain or an electric hoist can be furnished with the package deal. **(A-22)**

Truck for Greasing

A truck designed to go up and down the alleys of all production departments in textile plants was shown by Alemite Div., Stewart-Warner Corp., Chicago, Ill. The truck is equipped with all the necessary devices for power- or hand-greasing. One feature is an oil-cup filler with a drip-proof nozzle.

Features pointed out by the manufacturer are: (1) it saves time; (2) waste is eliminated; (3) since lubricants are kept in closed containers, contamination is prevented; and (4) better lubrication and longer machinery life result. **(A-23)**

Charge Batteries on Trucks

You can charge your batteries right on your electric trucks if you use the battery charger demonstrated by La Marche Mfg. Co., Chicago, Ill. The battery charger fits on the truck, and the battery does not have to be removed.

Most chargers shown are designed to charge a battery overnight by connecting it to a.c. power lines. Quicker charging is also possible with special models. Prices begin at $60. **(A-24)**

Adjustable Dock Board

An adjustable dock board for a positive and safe bridge between carrier and dock was shown by Karl A. Herman Co., Grand Rapids, Mich. The board has a positive-geared counterweight action so that it's easy to raise or lower the dock. The dock can also be shifted sideways for 10 ins. The cost is $395.

Rubber dock bumpers can also be furnished with the dock boards to protect the building, carrier, and cargo. The price of a section of bumper for a 4x4-ft. dock board begins at $11.80. **(A-25)**

Scales for Crane

Hydroscale, a hydraulic scale that weighs materials while they're being loaded by a crane or hoist, was shown by Hydroway Scales, Inc., Detroit, Mich., and since the materials are weighed while they're being loaded or unloaded, a central weighing station is no longer necessary.

One textile application is said to be weighing cotton as it's removed from trucks or boxcars. An accuracy of 0.5% is claimed. **(A-26)**

►A ¼-in. stencil-cutting machine was demonstrated by Ideal Stencil Machine Co., Belleville, Ill. The machine is said to insure stencils cut with absolutely parallel lines and positive character and word spacing. Over 200 characters can be spaced in a 4x6-in. area. It cuts 43 letters per running foot and 10 lines in a 4-in. space. **(A-27)**

►A self-sealing band-strapping tool was demonstrated by General Strapping Corp., New York, N. Y. The manufacturer says that one man can apply more than 200 straps an hour with the tool. The tool is simple to operate: You insert the band, apply the tension with a lever, and then seal the band. **(A-28)**

Two-Way Truck Radio

A two-way radio shown by Radio Corp. of America, Camden, N. J., provides direct communication between fork-lift-truck drivers and a dispatcher. Features are: (1) the driver is reached instantly, no matter where he is working; (2) detailed instructions can be given; and (3) there are no bells, buzzers, or lights to disturb other workers.

The equipment can be applied to any fork truck now in service. It saves manpower, floor space, equipment, and production time. **(A-29)**

►Steel shelving that you put together yourself was shown by Borroughs Mfg. Co., Kalamazoo, Mich. The company furnishes one-piece closed uprights, and you hook the shelving in slots. No bolts are needed, and shelves can be fitted to any position needed. **(A-30)**

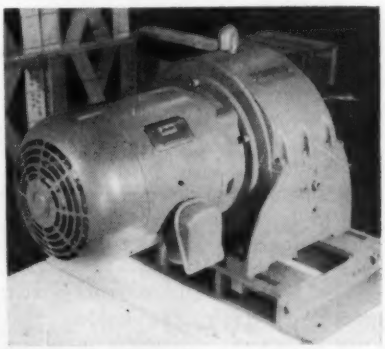
►An electric stencil-cutting machine that operates on an electric-current cost of only 2¢ per hr. was shown by Marsh Stencil Machine Co., Belleville, Ill. Power is supplied by a ⅛-hp. motor, and the machine is plugged into a light socket. To cut stencils, you just press the indicator with your finger tips. **(A-31)**

Floor-Maintenance Machine

The Tennant Model-E floor-maintenance machine was shown for the first time by G. H. Tennant Co., Minneapolis, Minn. The manufacturer says the machine does just about all floor cleaning: it cleans, rewaxes, buffs, and polishes.

The machine is a lightweight model and weighs only 87 lbs. It's 23½ ins. long, 24 ins. wide, and 13½ ins. high. A 21-in. steel-wool roll is used for buffing, and a 21-in. brush is used for polishing.

The machine is exceptionally easy to use. It has the correct nose pressure for buffing modern finishes, and no handle pressure is required. **(A-32)**



Gear Motors

Gear motors suitable for several textile applications were shown by Westinghouse Electric Corp., Pittsburgh, Pa. Specific uses for the motors pointed out by the manufacturer are on calenders, tenter frames, cards, and slashers. The gear motors are self-contained drives, and each consists of a high-speed motor and a speed-reducing unit. **(A-33)**

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A COMPACT WALL FILE holds copies of all dye orders on forms called beam tickets. Each lot or portion of a lot carries a beam ticket with it all through processing. The file shown in this picture is used to hold beam tickets through the dyeing process.

FINISHING OPERATIONS are checked by means of colored tabs that slide along the bottom of this set of wall files. Beam tickets, transferred from the dyeing file, have typed-in notations concerning finishing steps; and the tabs are moved along as each step is completed.

How Colgate Keeps Up With DYEHOUSE ORDERS

A compact wall file that provides information concerning lots in process is the key to Colgate Piece Dye Works' production-control system. Developed by the processing office, the file provides—

- **A ready reference for each department head**
- **Accurate knowledge of the position of each lot**
- **A check on the progress of each dye lot in regard to the promised delivery date**

By ROBERT W. PINAULT, Assistant Editor, TEXTILE WORLD

What it is, where it is, and when it must be delivered are some of the questions answered in regard to dye lots in process by the production-control system set up by Colgate Piece Dye Works.

The heart of the system is two groups of transparent holders that carry copies of dye orders made up from the original converter's order. An order is filed in one group of holders until the actual dying is done. After that, the order is transferred to the second file while the successive steps in finishing, examining, tubing, and packing are carried out. The whole filing system occupies only a few square feet on an office wall.

How Orders Are Made Up

When a converter's order comes in, it is broken down into the necessary number of jig or beck lots and given a Colgate dye order number. If the order is so large that all pieces cannot be listed on one set of forms, it is broken up into two or more orders. Different order numbers are used to identify each section of the order. After a check has been made with the warehouse to be sure the goods are actually on hand, a sample is sent to the laboratory.

The laboratory determines standard processing procedure for each style, and this information is put on a quality sheet that provides a permanent record of each style and how it is to be handled. Fiber, construction, gray width, finished width, and any other special characteristics are included in the record. Each department has a file of these quality sheets for reference and uses them constantly.

From the quality sheet and the original dye order, a combination form is typed. On this form, the Colgate dye order number and a piece number for each piece are listed. Copies of the form go to the dyehouse, finishing and inspecting department, and packer. One copy remains in the production office. Smaller forms, called beam tickets, that contain necessary processing instructions complete all the paper necessary to keep lots identified and located throughout the mill.

Beam Tickets Are the Key

Beam tickets are made up in a series of five for each order. Four of these tickets go to the gray room, where one ticket is inserted in the end

CONTINUED ON PAGE 172

Checklist for COTTON COMBERS

- Starting from the machine condition, you can check what processing trouble results and the remedy
- Starting from the result, you can check the condition that caused the trouble and find the remedy

By JOHN E. ALLEN

Condition	Result	Remedy
Cam and Cam Bowls Worn	Poor piecing. Cloudy combing	Check when combers are reset. Replace if worn or do not fit groove in cam
Coilers Dirty	Bunches in work	Check cleaning schedule
Tubes dirty	Retards free passage of sliver	Cover a piece of broom handle with flannel, dip it in whiting, and clean the inside of the tube
Coiler Trumpets Hole too large	Poorly condensed sliver. Bunches are allowed to pass	Use standard-size trumpet for the sliver
Connecting Rods and Studs Unevenly set	Cloudy combing	Check when comber is overhauled
Cushion Plate Dirt under cushion plate and feed roll	Bunches in work	See that proper cleaning is being done
Detaching Rolls Poorly covered Defective leather	Combing is cloudy	Adopt system of changing and varnishing rolls
Detaching Rolls (Steel) Worn flutes	Leather rolls slip; cloudy combing	Worn flutes should be refluted
Roll Bushings Dirty and choked	Rolls wear and bind; poor combing	Inspect and correct during overhauling
Roll Blocks Set unevenly	Cloudy work	File and readjust blocks
Draw-Box Clearers Packed with waste and seed	Roll laps; waste passes along; flutes wear	Pick more often. Replace flat clearers with the slotted type
Draw-Box Rolls (Steel) Dirty and oily	Bunches and oily work	Check cleaning and oiling against mill standards
Worn flutes	Rolls do not grip fibers properly; uneven drafting	Check for worn flutes when combers are overhauled

Condition	Result	Remedy
Draw-Box Rolls (Leather) Worn roll bushings	Cloudy work	Scour bushings. Replace worn ones during resetting
Draw-Box Gearing Worn and poorly set	Backlash. Lost motion and uneven work	Check and correct when machines are overhauled
Feed Rolls Set too far	Poor piecings	Check setting between feed roll and nipper knives
Half Laps Defective needles	Poor combing	Inspect often
Half-Lap Cleaning Brushes Worn and poorly set	Choked cotton between needle strips	Keep brushes in good condition and set properly. Reverse them every six months
Set deeply	Short fibers are forced too deeply between strips; good cleaning is prevented	Check settings
Lap Pans Dirty	Poor combing	Adopt polishing system. Polish a certain number of lap pans weekly
Lap Rolls Too much draft between lap roll and feed rolls	Uneven work	Reduce draft
Leather-Roll Weight Levers Dry and binding	Cloudy combing	Keep cleaned and in good condition
Nipper Knives Not set properly	Cloudy combing	Check setting of nipper knives to cushion plate
Nipper-Spring Studs Dry	Stands wear	Check oiling
Segments Poorly set	Poor piecings. Incorrect timing	Check setting of front edge of segments
Sliver Piecings Too thick	End breakage. Uneven work at later processes	Check operator's piecing methods
Stop Motions Slow operating	Uneven work	Check daily. Make stop motions operate quickly
Top Combs Defective teeth	Cloudy combing	Inspect often; correct defective teeth

HUMIDITY DUCTS help keep this plant free from serious lint problems. The relative humidity is maintained at 60%. The system also keeps workers comfortable in the summertime, and it lessens the blowing-down time.

How Knitters Are Tackling The LINT PROBLEM

Many methods of getting rid of troublesome lint were revealed in a recent survey of underwear knitting mills. Some of the devices in use are —

• Overhead fans • Humidity ducts • Air blowers • Needle brushes

By JAMES H. BLORE, Associate Editor, TEXTILE WORLD

Lint is Enemy No. 1 to knitters who run staple-fiber yarns. The lint accumulates on lamp brackets, beams, stop motions, yarn cones, dial caps, and needle cylinders. Lumps of lint occasionally drop into the needles or get pulled into the needles by the yarn.

When this occurs, a piece of faulty cloth results. Sometimes one or two needles get broken. Sometimes the lint makes a dirty slub in the cloth, but usually a hole in the cloth is made. On rib machines, the stitches seldom pick up; and several yards of faulty cloth are often made before the fault is discovered unless hole detectors are fitted to the machine.

Some mills cut off the fabric containing these holes and drop stitches during the laying-up process. The pieces are often sold for cleaners. A few mills turn the faults to the side and cut them out between garments. Other mills ignore the faults and sew the pieces into garments along with top-quality goods. The faults are sorted out in inspection and the faulty garments are repaired for imperfects.

This loss in seconds, waste, or time is sometimes absorbed in overhead costs as loss in seconds. This practice sends up the finished cost; so the best way to tackle the problem is at its source.

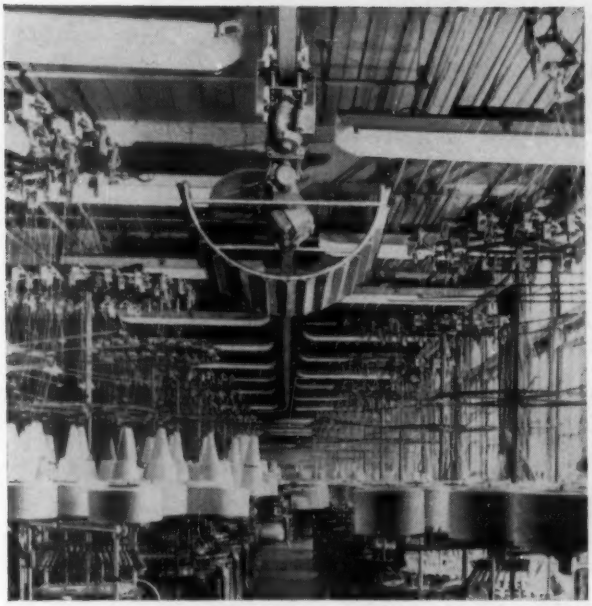
Let's see how underwear knitters are tackling this problem.

Reduce Lint in the Air

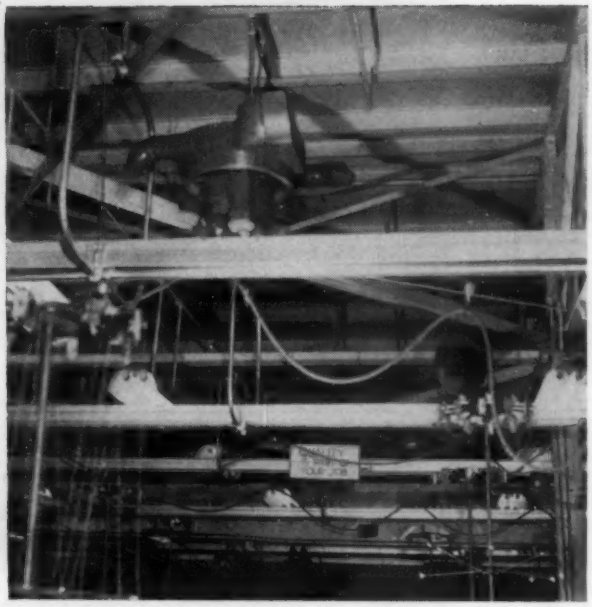
The obvious answer is, of course, to eliminate or reduce the lint in the air. Combed cottons and fine yarns produce less lint than carded yarns and coarse yarns, but markets demand carded and coarse yarns for price and other reasons.

The lint in the air has been successfully reduced in several mills with controlled humidity. Russell Mfg. Co., Alexander City, Ala., has little trouble from lint because it has a Bahnson central-station humidifying and cooling system that keeps the relative humidity at 60%. The system keeps workers comfortable in the summertime, and it does not corrode machinery.

Lint blowing of latch-needle machines with the air hose is not practiced as regularly as in mills without humidification. Hand fans made from fiber board are enough to keep the Tompkins spring-needle machines clean.



TRAVELING CLEANER keeps lint from sticking to the ceiling and walls. The fan rotates 360° to protect the yarn going to the needles.



BLOWER UNIT travels around this knitting room every 4 mins. Three nozzles clean off the ceiling beams, light fixtures, and stop motions.

Gibbs Underwear Co., Philadelphia, Pa., uses Abbeon humidifiers that help to keep down lint; but knitters notice that lint is not such a problem in the summertime when the windows are open to let in the humid Philadelphia air.

Lint that does accumulate in this mill on the beams and light fixtures is removed by a large portable vacuum cleaner. One man operates this machine during the week end.

Air Hose Is Universal

Air hoses with pressure up to 100 psi. are universally used in underwear mills to keep the knitting head free of lint. Gurney Mfg. Co., Prattville, Ala., provides each knitter with an air hose that has a long nozzle bent to get behind troublesome obstructions.

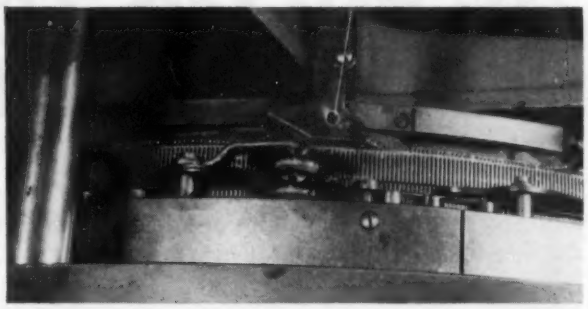
Knitters are trained at this plant to blow lint away from the needles rather than into the fabric. No blowing down is done below the cylinder during knitting. A thorough cleaning of these parts is done at the end of each roll.

Several mills have installed the Scott & Williams air-cleaning unit. Piedmont Fabrics, Inc., Gastonia, N. C., uses these units on rib machines in combination with a regular blowing off with the air hose by the knitter.

The cleaning device is set to blow lint off the machine for 7 secs. every 2 mins. Knitters use the air hose every 30 mins. to clean spots not reached by the automatic cleaner. Several mills use traveling cleaners that wind up and down the knitting alleys. The principal use of these cleaners is to keep lint from settling on the light fixtures, humidity ducts, and overhead pipes and beams.

One such cleaner is a Parks-Cramer unit installed at E-Z Mills, Inc., Cartersville, Ga. This cleaner is a rotating blower type. One air nozzle is pointed toward the ceiling; and two side nozzles blow down the light fixtures, humidity ducts, and stop motions. The space over each machine is cleaned every 4 mins.

Standard Knitting Mills, Inc., Knoxville, Tenn., uses a traveling cleaner with separate fans for up and down cleaning to keep lint from accumulating on the ceiling and on the top stop motions.



CIRCULAR BRUSHES keep the cylinder slots above the cam sections free from lint. Two brushes rotate on wires screwed to the cam section.

A Bahnson Allred cleaner operates in one mill. The cleaner rotates 360°, and the blades are adjusted to blow down the walls in addition to the ceilings. Vents under the cleaner are closed to protect the yarn running to the needles.

Spring-Needle Machines Have Air-Cleaning Systems

Bassett-Walker Knitting Co., Bassett, Va., and Griffin Knitting Mills, Inc., Griffin, Ga., have successfully applied air-cleaning units to their Tompkins machines. The system at Bassett operates with a timing device to blow off the needles and burrs at regular intervals.

The air on both systems enters through a rotating valve on the top bracket of each head. The air is carried through a copper pipe that runs down a take-up bracket arm. Small holes in the pipe direct the air to the knitting elements.

Tompkins Bros. is now fitting this device to its new machines.

Lawrence Knitting Mills, Inc., Charlotte, N. C., uses a large ceiling fan over each knitting machine. The fan is run slowly for 1 min. before each roll is cut from the machine. The fan is not operated at any other time. Air movement is sufficient to clean down top stop motions

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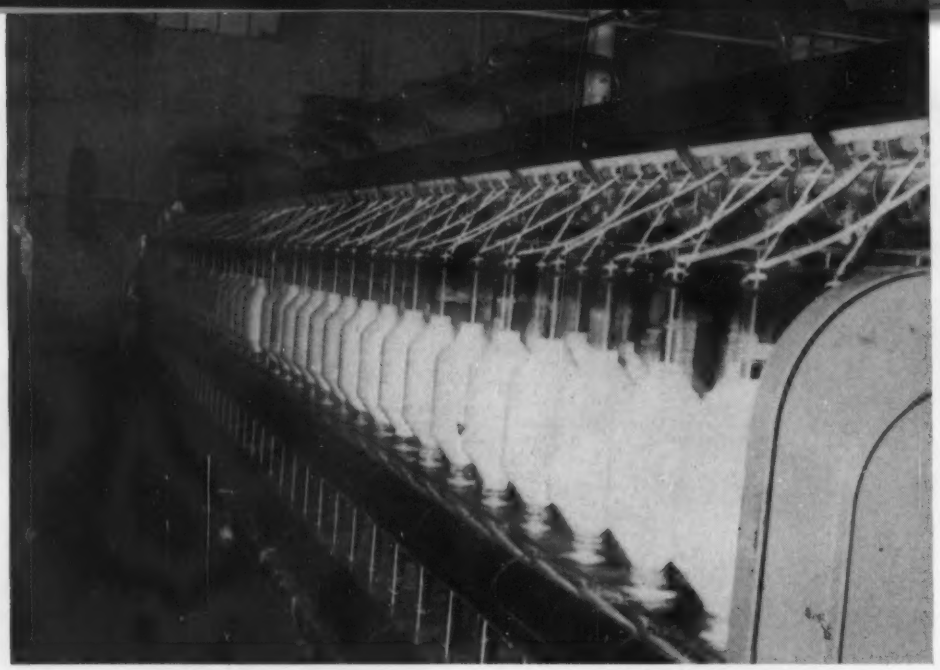


SACO-LOWELL 12x6-IN. SLUBBER produces a 40-oz. package. Six of these units and two H&B slubbers replaced 11 9x4½-in. intermediates. The large package allowed a 33% decrease in roving-operations labor.

25% More Yarn, 33% Less Labor With LARGE-PACKAGE ROVING

This mill replaced 11 9x4½-in. roving frames with 8 12x6-in. frames, made some changes in carding methods and drawing equipment, and added some spinning frames. Results—

- **Yarn production increased 25%**
- **Roving labor was cut 33%**
- **Spinning job assignments were increased 50%**

By MICHAEL LONDON, Assistant Editor, TEXTILE WORLD

Waverly Mills, Inc., Laurinburg, N. C., using existing pickers and cards, has jumped its yarn production 25%. The increase was made possible by changes in drawing, roving, and spinning equipment and by new carding methods.

The plant produces coarse yarns for carpets, insulation, narrow fabrics, and upholstery. Fibers used are cotton and viscose, each comprising about 50% of total production. The yarn numbers run from 2s to 12s, and fiber staple lengths are about 1 in. for cotton and 3 ins. for viscose.

Waverly increased its card production 50% by using the methods set up in the N. C. State card-waste study [TW, March, '55, p. 87]. Cards process cotton and coarse viscose at 18½ lbs. per hr. without losing the quality of lower production rates. The rate is 13 lbs. per hr. for fine viscose.

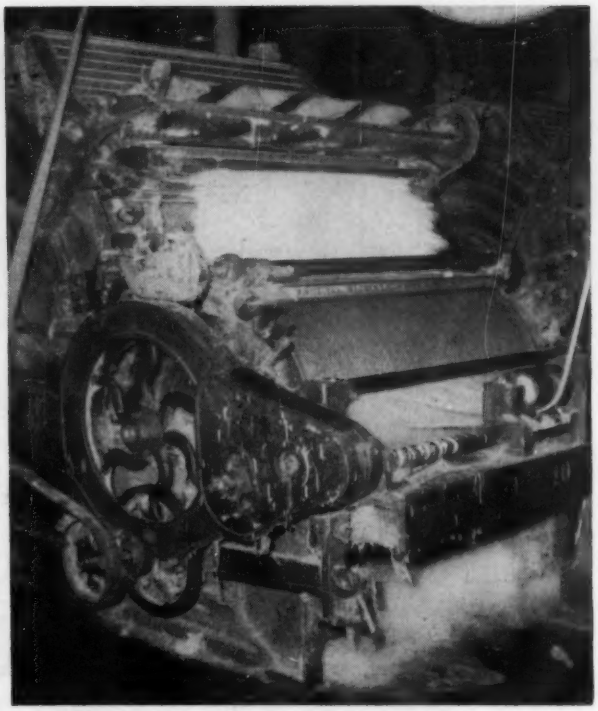
The increase in card production made it necessary to make major changes in drawing, where 128 deliveries of cushion-type rolls were replaced with the same number of Ideal rolls. Drawing speed was then increased from 120 to 200 ft. per min. with the same two drawing processes that had been used.

0.50 Hk. Roving Is Standard

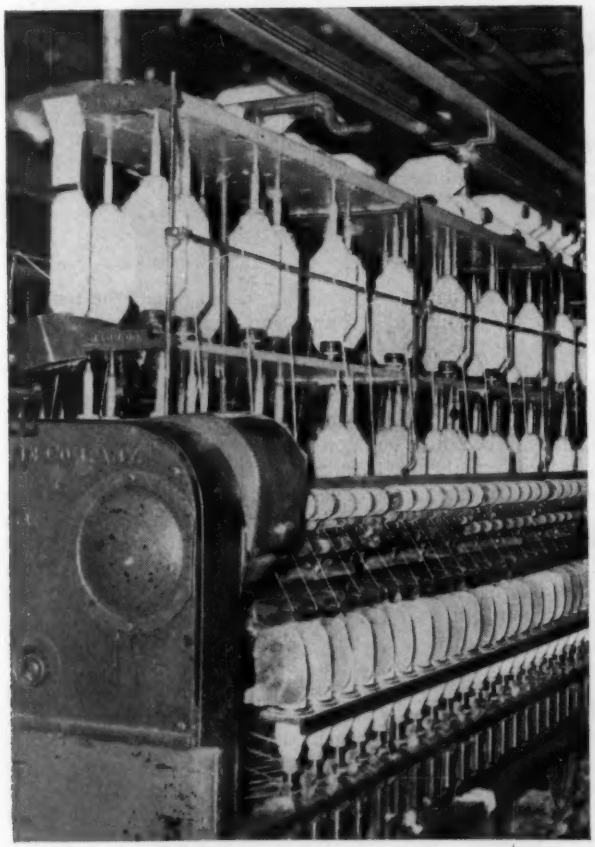
New roving equipment increased the size of the roving package and made possible a 50% increase in spinning job assignments. Waverly replaced 11 9x4½-in. 132-spindle intermediates with six Saco-Lowell TS-3 12x6-in. 88-spindle slubbers and two H&B 12x6-in. 64-spindle slubbers. Roving was increased from 1 to 0.50-hank roving, and the plant standardized the heavier roving for all yarn numbers. The 12x6-in. roving frames, which increased bobbin weight from 20 to 40 oz., allowed a 33% decrease in roving-operations labor; and more floor space became available with the fewer number of frames.

To 13,368 spindles of 3¾-in.-gauge spinning frames with the Roth long-draft system, Waverly added 2,160 spindles of 4½-in. gauge frames with the H&B four-roll system. The frames, which have not had their traverse changed, produce the same size bobbin as before. The spinners do not have to creel as often, however; and their job has been made easier, allowing the increase in job assignments. Waverly is spinning 3-in. viscose on the H&B four-roll system with no modification.

DRAWING FRAME speeds were increased from 120 to 200 ft. per min., with the same two-process drawing that had been used. Ideal rolls replaced 128 deliveries of cushion-type rolls.

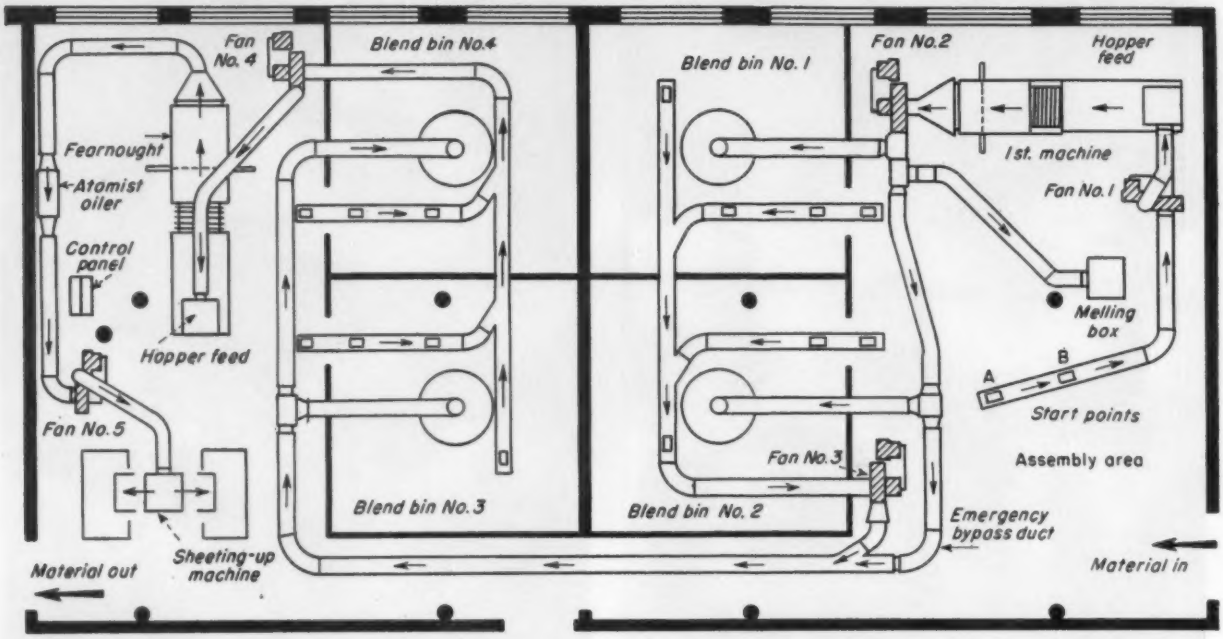


CARD PRODUCTION was increased 50% through the use of methods developed in the N. C. State waste study. Cotton and coarse viscose are processed at 18½ lbs. per hr. and fine viscose at 13 lbs. per hr.



3¼-IN.-GAUGE SPINNING FRAME uses 9x4½-in. roving. Although most frames have been converted to 9x4½-in. roving packages, Waverly still runs a few frames on the smaller packages for special needs.

NEW 4½-IN.-GAUGE SPINNING FRAME has 9x4½-in. roving package. The larger package has made possible a 50% increase in spinning job assignments.



WOOL-BLENDING SYSTEM uses four blend bins to produce a better blend. Three different blends can be processed simultaneously.

WOOL-BLENDING System Reduces Labor 50%

● A semiautomatic wool-blending and -oiling system that uses four blending bins has improved blends, cut the original 10-man crew to 5, and allowed three blends to be processed simultaneously

THE MOST UNPLEASANT MANUAL JOB in a wool spinning mill, blending and oiling raw wool, has been transformed into a semiautomatic operation at Allen Priest & Sons Ltd., Huddersfield, England. The wool-blending system gives an improved blend.

The plant has a weekly capacity of 40,000 to 50,000 lbs. Of the 10 men previously employed in blending, five have been released for other work.

The system links all the blending processes by underground suction pipes that deliver the raw wool to opening, oiling, and blending machines. The process is controlled from a master panel. Signal lights indicate when fans and motors are running.

Four blending bins in the setup enable the plant to process two or three different blends simultaneously.

Raw wool is assembled at the starting point in the required qualities and colors, and the wool is fed by hand through a trap door to the underground suction ducting.

Suction Fans Move Wool

The wool is picked up and conveyed by a suction fan to the first hopper feeder, which transfers it to the first opening machine. A second fan passes the wool to blend bin No. 1, where the wool is layered horizontally by a rotary blender.

A sample of the blend is delivered to a melling box at this point to enable the accuracy of the color mixing to be checked.

When blend bin No. 1 is full, another blend is started and fed into bin No. 2. While this bin is filled, the first bin is emptied. The material is pulled down vertically into the pickup points inside the first bin. The wool is then transferred by fan along the underground ducting to blend bin No. 3 for further horizontal layering and vertical pulling-down operations.

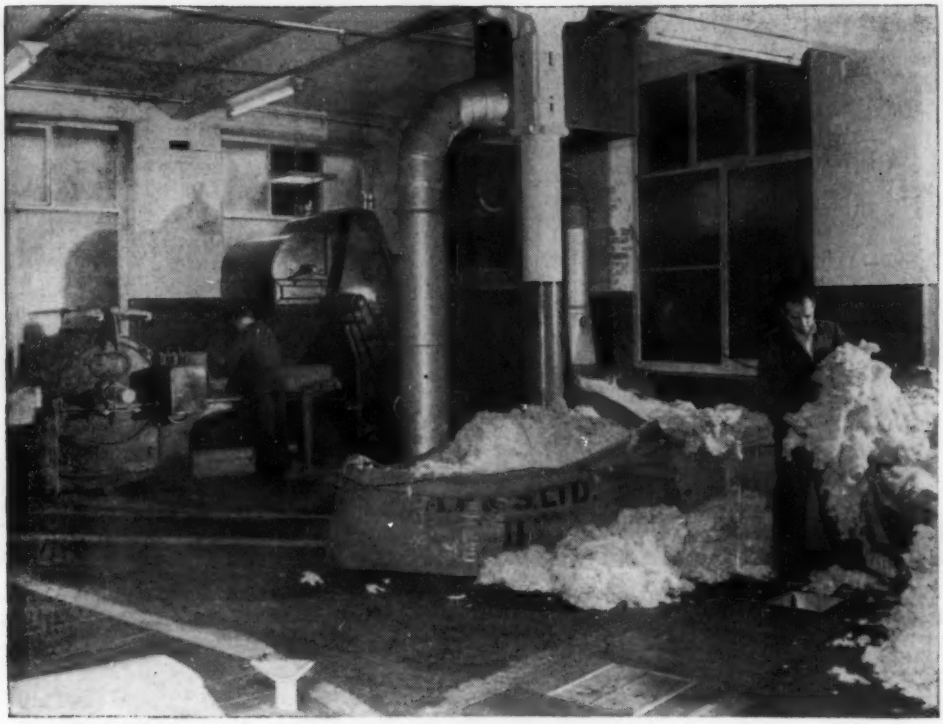
From blend bin No. 3 the material is sent by fan to the hopper feed of the last opening machine. The addition of concentrating lattices to the main delivery lattice on the sheeting-up machine partly compresses the material before delivery to reduce treading the sheets.

The material fed into blend bin No. 2, when the first bin is full, is transferred along the underground ducting to blend bin No. 4. From bin No. 4, the material passes to the oiler and sheeting-up machine.

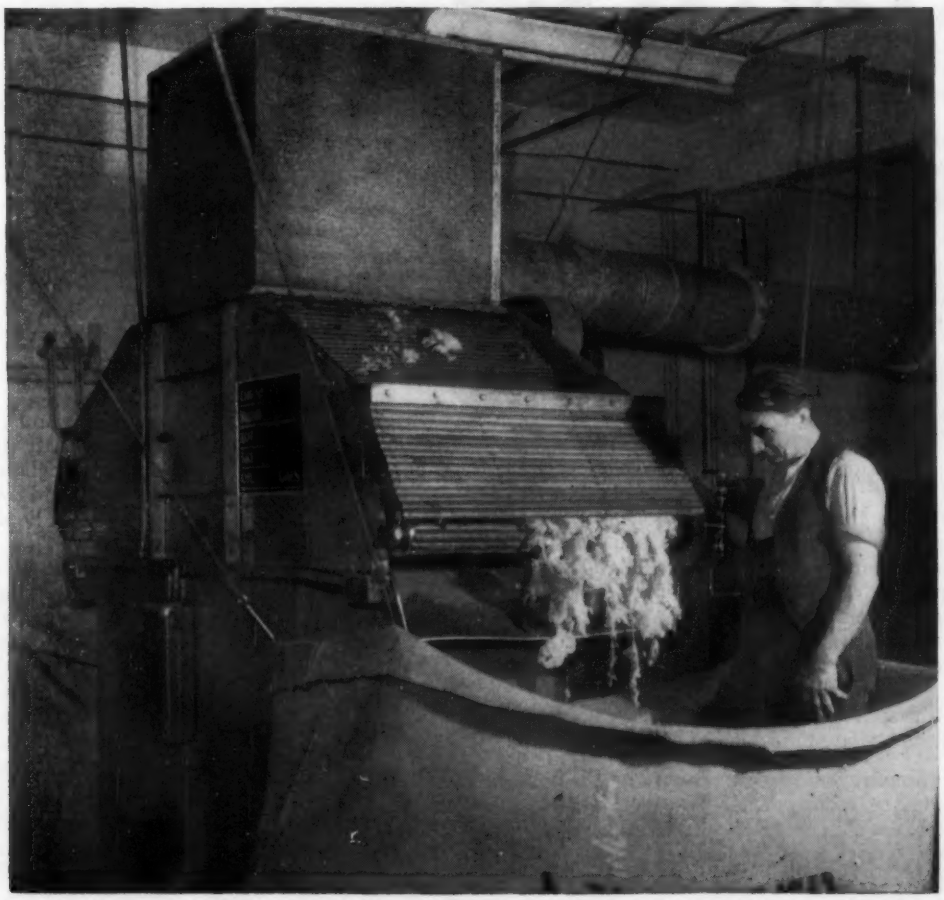
Double blending improves mixing without breaking fiber lengths.

In sequence blending, where a small overlapping of blends doesn't matter, three blends can be processed simultaneously. One blend is fed into blend bin No. 1 while another is transferred from bin No. 2 to blend bin No. 4. The third blend is conveyed from blend bin No. 3 through the Fearnought to the oiler and sheeting-up machine.

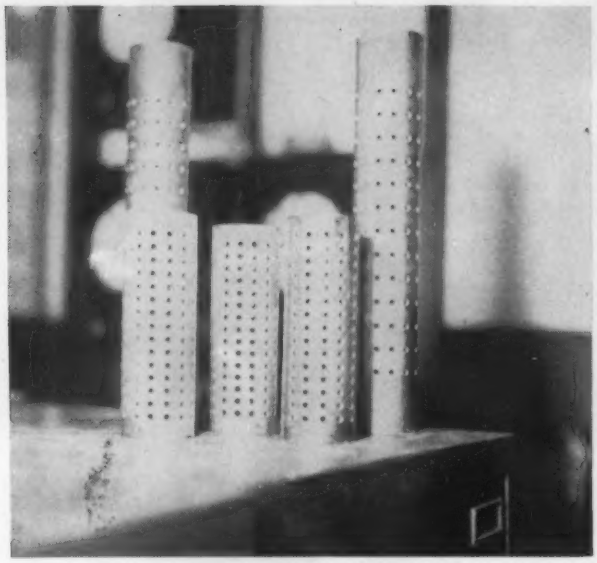
From Target, British Information Service.



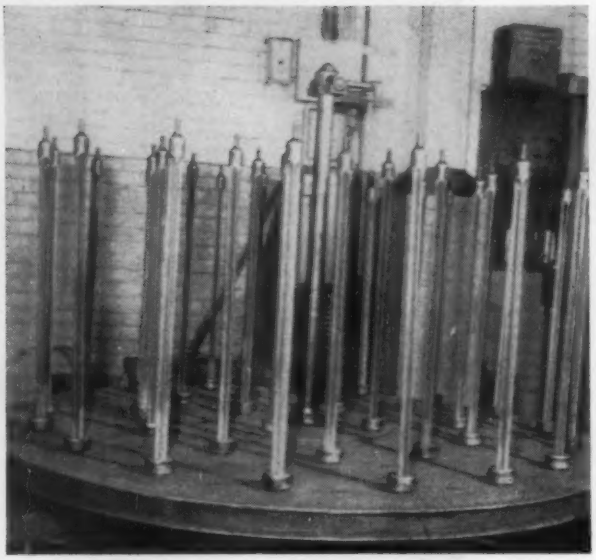
TWO TRAP DOORS at the assembly area receive the raw wool for blending and oiling. Suction fans pass the material to the hopper feed.



TREADING SHEETS is reduced by adding concentrating lattices to the main delivery lattice to the sheeting-up machine, which has two discharge points.



PERFORATED TUBES on which the top is wound are twice the length of the conventional 6½-in. type used for yarn. The spindles on the carrier hold two tubes each.



PACKAGE-DYEING CARRIER is equipped with 32 spindles instead of the usual 100. The added space accommodates the extra bulk of the top.

For Uniform Color— PACKAGE-DYE Synthetic-Fiber Top

● At Livingston Worsted, a package-dyeing machine is producing uniformly dyed synthetic-fiber top. To adapt the unit for top dyeing, Livingston reduced the number of spindles on the package-dyeing carrier and doubled the length of the perforated tubes that carry the top.

By **MICHAEL LONDON,** Assistant Editor, TEXTILE WORLD

Livingston Worsted Mills, Inc., Holyoke, Mass., is dyeing synthetic-fiber tops in a package-dyeing machine instead of using the regular top-dyeing method. When synthetic-fiber tops are dyed in the top-dyeing unit used for worsted top, the fibers, relatively noncohesive, tend to separate; and the dye liquor shoots through the spindle perforations at points where the fibers have become loosened. Uneven dyeing results. Dyeing in a package-dyeing machine prevents this condition.

To adapt the package-dyeing machine for top, J. J. Stursberg, president of Livingston, had the number of spindles on a package-dyeing carrier reduced from 100 to 32. With fewer spindles, enough extra space was made available to accommodate the added bulk of the top.

Tubes Hold Seven Pounds of Top

Six to seven pounds of top are put on perforated tubes with a ball wind. The tubes are twice as long as the 6½-in. type used with yarn. The spindles on the carrier hold the tubes, two tubes per spindle.

A Venango package-dyeing machine accommodates the carrier loaded with top. Although the machine has provision for two-way liquid flow, the dye liquor is only run inside-out. Since the one-way flow eliminates the reduction in tension that takes place during the liquid direction changes, fiber slippage is at a minimum and dyeing is even. The automatic panel for controlling liquid direction changes is manually operated.

Dynel, Dacron, Orlon, Vicara, and silk are dyed by this method, with 25 lbs. of pressure forcing the dye liquor through the fiber. Two Venango machines dye two rounds apiece per 8-hr. day, a total of 1,536 lbs. of top.

Fans allow the use of toxic carriers that wash out better and produce faster dyeings than some of the less toxic carriers. The dyeing procedure is the same as for synthetic-fiber top dyed by the usual top-dyeing method.

In the regular top-dyeing process, batches consist of approximately 900 lbs., whereas in the new process they weigh about 380 lbs. However, Livingston thinks that the increase in evenness and fastness and the decrease in seconds more than makes up for the production loss in the new method. As a matter of fact, Livingston considers it impractical to dye synthetic-fiber top by the worsted top-dyeing method.

Alabama Men Spotlight SPINNING Methods

Half the spring meeting of the Alabama Textile Operating Executives was devoted to spinning. Topics covered included—

- **Reworkable-waste control**
- **Frame and ceiling cleaners**
- **Change-overs and new frames**
- **Rewound filling**

Spinning Waste

Reworkable-spinning-waste control was discussed by 11 mills. Four mills reported that waste made by individual spinners is weighed and charted for each shift. Two of these mills weigh only Pneumafil waste.

Ten mills reported that waste is weighed by shifts, and most of these mills post a weekly chart showing actual waste compared with the standard.

Five mills have Pneumafil.

Mill A reported that each spinner has a daily waste standard to maintain. When the waste is over the standard, the spinner's waste card is marked in red; when the waste is under the standard, it is marked in black. Totals are posted monthly against each spinner by name. Spinners who are in the red are interviewed privately before the list is posted in an effort to impress them with the importance of keeping down waste.

Mill D said that spinners are allowed to creel in a new bobbin when one round of yarn is left on the empty bobbin. The remaining round is removed by bobbin-stripping machines. When more than one round is found on a bobbin, supervisory action is taken.

Sweepers Collect Waste

Mill E has assigned spinning-room sweepers to collect and weigh reworkable waste made each day on specific frames. At **Mill J,** the assistant foreman weighs the waste.

Mill H posts daily the Pneumafil waste made by each spinner. The amount is shown in pounds rather than percentages, since the mill believes that the spinners understand the former figure better. The mill weighs and posts all waste figures 30 mins. before each shift changes.

Mill K brings up waste control for discussion at the weekly second hands' meeting whenever the percentage appears to be increasing too rapidly.

Operators with poor waste records are observed more closely, and an effort is made to teach them the importance of waste reduction.

Frame and Ceiling Cleaners

Nine out of 11 mills reported the use of mechanical cleaners in the spinning room. Types of cleaners discussed included overhead, ceiling, underframe, and Pneumafil.

All nine mills said that the cleaners improved the quality of work in process. Six mills reported that the installation of various kinds of cleaners pemitted increased work assignments.

Mill A increased spinners' assignments 25% after installing frame cleaners.

Mill B reported that spinning costs were reduced 7.25%, and the mill believes that use of a newer type of cleaner would further reduce costs.

Blowing Down Is Reduced

Mill E credited frame and ceiling cleaners with an increased work assignment of 10% for spinners, but it believes that other types of cleaning should be coordinated for best results. Overhead blowing down was reduced from once a week to once in 10 weeks.

Mill F did not increase work assignments upon installing frame and overhead cleaners, but it did reduce the frequency of cleaning.

Mill G reported that work assignments could not be increased even though the mill has every other frame cleaner connected to a ceiling-cleaner trailer. Fairly good results are obtained, according to the mill, although blowing down has not been eliminated and creels still have to be wiped.

Mill H was the only mill to report the use of underframe cleaners. This mill also has Pneumafil, ceiling cleaners, and regular frame cleaners.

The underframe cleaners do an excellent job of keeping the tapes free of lint, idlers clean, separators blown off, travelers clean, and the floor beneath the frame clean, according to the mill.

Overhead cleaning has been reduced from once each six running days to once each 24 days.

More Work Assigned

The underframe cleaners and Pneumafil permit increased work assignments, but no adjustment was made when the ceiling cleaners were installed.

Mill J has overhead cleaners with one fan blowing downward and the other upward. This system decreases the cleaning of the upper parts of the frames by 75% and permits the spinner to run two more sides on some yarn counts.

Mill K reported that its ceiling cleaners are saving $125 per week. In addition, the mill has frame cleaners and Pneumafil. Work assignment has been increased 7%.

Spinning Change-Overs

Four mills reported the results of installing spinning change-overs.

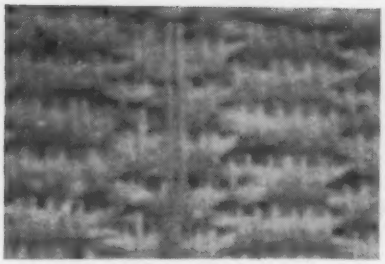
Mill A—Draft limits are 16 to 30; yarn uniformity improved from 14.7% to 13.7%; breaking strength increased from 104 to 109; break factor increased from 1,856 to 1,955. Average draft was 13.8 on a conventional frame with double-creel speeder roving; it is 24 on change-over with double-creel slubber roving. Ends down on conventional frames were 36 to 40; on the change-over, ends down are 40 to 46.

Frames are cleaned as follows: Wipe back sides every 8 hrs.; clean revolving clearers three times a week; clean steel rolls and aprons and buff top rolls once every three months.

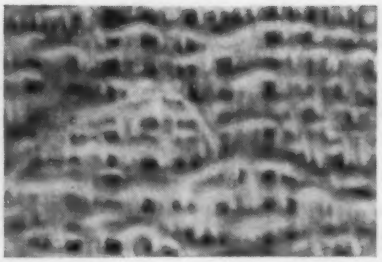
As to maintenance, the mill had to change from a 20-pitch to an 18-pitch gear to stop stripping of the back-roll, middle-roll, and carrier gears. The top rolls require additional weighting.

Mill B—Draft limits are 12 to 17;

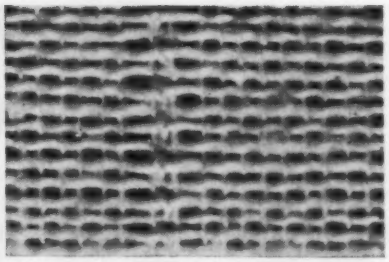
CONTINUED ON PAGE 176



BROKEN WARP ENDS in various fabrics react in different ways. The broken end in this barathea cloth makes a major defect.



DRAPERY-CLOTH SURFACE does not show the broken end critically. Consequently, the defect is a minor one.



SOFT-FILLED SHEETING shows a warp end that ran out for 1½ ins. because the warp stop motion was out of fix.

What You Can Do To Reduce BROKEN WARP ENDS

In some fabrics, broken warp ends don't amount to much; but in other fabrics, they're major defects. The first goal in reducing seconds from broken ends is to eliminate the breaks entirely. To prevent the breaks—

- **Use the best yarn**
- **Slash the yarn correctly**
- **Set the loom motions properly**

By WILMER C. WESTBROOK, Consulting Editor, TEXTILE WORLD

AUTOMATIC WARP STOP MOTIONS, both electrical and mechanical, are efficient mechanisms. However, no matter how quick a loom stops when a warp thread breaks, a defect in the cloth invariably results. Most of these defects are minor ones and are hardly noticeable, but a hole or crack is formed in the fabric at every warp-thread break.

Naturally, the best way to prevent broken-thread defects is to prevent broken threads; and the first requirement is good, strong warp yarn, properly spun and sized. The yarn should be smooth and as free as possible from knots, slubs, and gouts.

The moisture regain and the relative humidity in the weave are important. Moisture makes cotton fibers cling together and actually strengthens the yarn.

Begin in Slashing

In slashing, the yarn is sometimes heated so much that it becomes brittle and, therefore, is easily broken. The yarn is occasionally stretched too much and all the life is removed; this life or elasticity is necessary for the yarn to withstand the stresses of weaving.

The warp yarn should be placed on the loom beam in a straight and orderly manner. If the yarn piles up against the beam heads, the selvages run slack in weaving. The pressure roll on the slasher sometimes cuts or bruises the yarn and causes excessive warp-thread breakage at the loom.

Slashed warp ends should be tied to the weaving pattern or drawn in with a minimum of crossed or tangled ends.

The weaver can prevent many broken warp threads by constantly patrolling the back or warp side of his looms. He can detect any extra ends or wild yarn here before it can become entwined with other ends and cause tangles. He can also remove any slubs and other yarn imperfections before they break ends.

When he patrols the weaving alley, the weaver can find and remove any defects in the yarn that have passed through the heddle eyes. Slubs or balls of lint often form on a warp end between the heddle and the reed, and the yarn slides through the lint until a gout or knot catches the ball and forces it into the reed. Then a break-out or pick-out results, which may cause second-quality cloth.

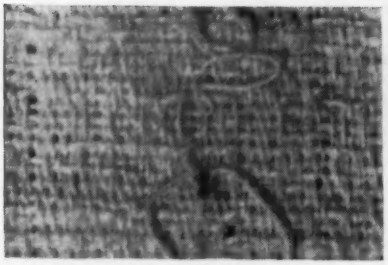
By catching and removing yarn imperfections before they enter the cloth, the weaver increases the quantity of the cloth and also increases the quality. Many imperfections can be removed without stopping the loom.

The settings of several motions of the loom have much to do with warp-thread breaks. Six motions or parts in particular can be controlled to reduce broken ends.

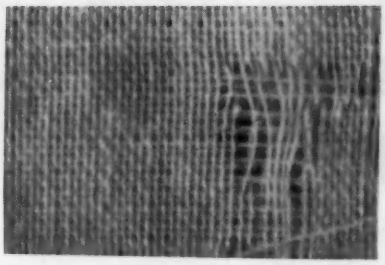
1. Let-off Motion

If a let-off motion is set correctly, it is very sensitive and lets the yarn wind off the yarn beam smoothly and evenly. The yarn-beam bearings should hold the beam journals snugly but should not bind at any point. The whiproll should revolve freely with the yarn; and the whiproll shaft should not bind, because the let-off motion will operate erratically. To compensate for any variation in the let-off motion, the loomfixer should check the tension of each warp each day and make any adjustments necessary.

The whiproll is one of the controlling points of the warp line since the height of the whiproll affects the cloth



LOOPED ENDS in the fabric are the result of a broken end at the drop wires. Burling is necessary.



PRINT-CLOTH broken warp end matted up between the harnesses and the reed and made this overshot.

hand and the general appearance of the cloth. It should be set to hold the warp yarn in as straight a line as possible with the drop-wire eyes. Any abnormal setting of the warp line causes undue strain and wear on the yarn.

2. Warp Stop Motion

The warp stop motion should be set to form the most-suitable warp line for the fabric being woven. A straight warp line results in the least strain on the yarn but does not produce a smooth fabric since the ends have a tendency to form in pairs or groups.

Raising the stop motion above the center of the heddle eyes when the harnesses are level makes the bottom line of shed tighter than the top at the beat-up. The result is a more-even spread of the yarn and a smoother fabric. Therefore, a compromise in settings must be reached to take all the possible strain off the yarn and still have the best shed to produce the desired qualities in the fabric.

Correct-gauge drop wires, in good condition and smooth, should be used in a sufficient number of banks to prevent crowding. The stop-motion mechanism should be in good condition and should be sensitive enough to stop the loom immediately when a drop wire falls. The defect that is made at any broken warp thread becomes a major defect if the stop motion does not function correctly.

The warp stop motion should be tilted to the proper angle to insure no undue strain on the yarn as it enters or leaves the stop motion. The stop motion acts as a filter to prevent much of the wild yarn, extra ends, lint, and loose slubs from entering the warp shed. The weaver should remove all such foreign matter before it causes tangles and break-outs. Therefore, much work is eliminated.

The brake should be synchronized with the warp stop motion. When the stop motion disengages the shipper handle, the brake should stop the loom at once with the harnesses level and the lay at about the bottom-center position.

3. Shedding Motion

The heddles should be smooth and straight with as little crowding as possible. The heddle frames should be hung so that there's a minimum of lateral movement. There should be no chaffing between the heddle frames, and the front frame should be located far enough back not to be struck by the lay. The harness springs should be strong enough to hold the frames firmly.

The dobby jacks on dobby looms and the treadles on under-cam looms should have a smooth positive action that opens the shed firmly and holds it until the shuttle is picked through.

The warp shed should be large enough for the shuttle to pass through easily. But any clearance above the minimum serves no useful purpose and exerts extra strain on the warp yarn. A clearance of $\frac{1}{8}$ in. between the top of the shuttle and the top line of warp shed is sufficient for most looms and weaves.

The harnesses should be timed so that the shed is open while the shuttle passes through. If the shuttle enters the shed before it is fully open or if the shed begins to close before the shuttle is clear, warp-yarn breakage results. On most weaves, the harnesses should be set with the bottom line of shed just clear of the shuttle race.

4. Picking Motion

The picking motion should be timed to pick the shuttle by the manufacturer's specifications for the model of loom used. If the shuttle is picked too early, it enters the shed before the shed is fully open; and if it's too late, the shed closes on the shuttle. Abnormal picking action also prevents true flight of the shuttle and causes extra strain on the warp yarn.

Other picking faults that cause warp-end breakage are:

a. Too much picking power, usually caused by a lug strap set too low on the picker stick or by a pick ball overhanging the point of the pick-cam toe

b. Excessive picker-stick stroke

c. Shuttle box, lay-end plate, or shuttle race not correctly aligned

d. Pickers worn, loose, or out of parallel

e. Binders and checkstraps not adjusted correctly to control the shuttle

5. Shuttle

The picking and shedding motions of a loom can be in perfect working condition, but there will still be friction between the shuttle and warp yarn. The shuttle should be kept smooth and free from nicks, splinters, and scars. The shuttle tips should be inspected periodically and kept sharp and true. A blunt tip or a small nick in the tip will break warp threads. A loose tip causes a lot of trouble, and the shuttle should be discarded.

As the shuttle begins to wear, the eye and clip bolts have a tendency to protrude. Additional washers should be used to correct this condition. If a protruding bolt contacts the reed during the shuttle flight, a burr will be formed on the reed wires. This burr will cut the warp threads during shedding and beating up.

If the shuttle wears excessively at any point, it should be planed, scraped, or sanded; and the cause of wear should be eliminated. A shuttle that's not true in dimensions has a tendency to turn in the warp shed or to fly out of the shed.

6. Take-up Motion

If the take-up motion does not operate correctly, excessive slackness may be formed in the cloth during the beating-up. This slackness puts a sudden strain on the warp yarn, and the chaffing action of the reed weakens the yarn.

The take-up roll covering or fillet should grip the cloth firmly, especially at the selvages. When a roll of cloth is doffed, care should be taken to have the cloth rod contact the take-up roll firmly and uniformly.

Miscellaneous causes of broken warp threads are: (1) splinters or other foreign objects falling into the warp shed; (2) trucks, boxes, ladders, etc. striking the yarn on the yarn beam, at the drag roll, or whiproll; (3) rough handling of the yarn; (4) chaffing and weakening of the yarn during pick-outs, matching filling, etc.; and (5) broken harness straps, springs, or hooks.

Tips on Making Uniform
PICKER LAPS

- **Make blending unit as small as practical; set openers and pickers for maximum opening; check air movement for smoothness.**
- **To adjust the pedal-feed regulator, calculate the velocity ratio between pedals and the cone belt. Then check the stock thickness to make sure it is constant in relation to the feed rolls.**

By N. H. POMFRET

THERE IS NO DEVICE on openers or pickers that controls the weight of stock that passes any given point. Only the bulk is under control, or should be, and not the weight. Yet, when openers and pickers are checked for uniformity, the weight per unit length of the lap is measured. And this same method of measuring uniformity is used for all subsequent processes.

Uniformity of bulk and weight are not the same thing, and a lap can possess one without the other. A lap uniform in weight per yard can be produced only when the stock is uniform in density and the picker delivers a lap uniform in bulk.

Blending

It is important not to mix or blend stock from bales of widely different densities. It is helpful to remove the tie bands from all bales needed for a mix in plenty of time for them to expand. The openers and pickers should be adjusted to give maximum opening —not only to extract trash but to get a more nearly uniform bulk, weight for weight. The more open the stock, the better the chance of uniform density.

The stock should be arranged around the machines with materials handling in mind. But the tender must not be tempted to take stock from the nearest bale in periods of pressure. Extended feed lattices are a helpful materials-handling device; each bale can be placed an equal distance from the lattice. In addition, walking time can be substantially reduced by filling the lattice of one machine completely before attending to the next.

Supervision is also easier with an extended lattice because the amount of stock fed on each circuit is plainly visible over a comparatively long period of time.

It is important to train the operator to feed small amounts of stock; and it is imperative that the blending hoppers contain as much stock as possible. Intimate blending cannot be achieved in any other way.

If an operator fills one blender with an armful of stock from one bale, that blender could deliver stock from only one bale. The number of bales that could be effectively blended under such circumstances would depend on the number of blenders.

If, on the other hand, stock from two bales is in the hopper, blending is done from twice as many bales as hoppers. The effectiveness of blending at this stage largely depends on the ratio of the stock fed per armful and the capacity of the hoppers. With other things equal, the larger the ratio of trips to hopper, the greater the chance of intimate blends.

Speeds and settings should be adjusted to keep the blenders running the maximum length of time. Such adjustment gives maximum opening and keeps the amount of material in the hopper nearly constant.

Openers

Like blenders, the speeds and settings on openers should be adjusted to give maximum operating time. The control mechanism should be as sensitive as possible to stop the blenders the shortest time between runs.

By doing this, the stock in the hopper feeders, and the pressure on the vertical lattices of the feeders, are kept more nearly constant.

Suppose a test is made of two machines with the following results:

Machine A		Machine B	
Seconds running	Seconds stopped	Seconds running	Seconds stopped
60	10	30	5
55	7	35	6
50	8	40	5
65	12	30	7
70	16	25	6
		30	5
		35	7
		25	3
		25	5
		25	4

Both machines ran the same time over the short test: 353 sec.; each ran 85% of the time. But there is considerable difference in the way each machine operates. If each machine has a production of 400 lbs. per hr., Machine A has a maximum difference of stock in the hopper of:

$$\frac{400 \times 16 \times 100}{60 \times 60 \times 85} = 2.09 \text{ lbs.}$$

Machine B has a maximum difference of:

$$\frac{400 \times 7 \times 100}{60 \times 60 \times 85} = 0.91 \text{ lbs.}$$

So, with other things equal, Machine B would be expected to deliver stock more uniformly.

Movement of Air

It is impossible to make a good lap unless the movement of air through the exhaust fans is smooth and regular. Irregular pressure in the exhaust pipes produces irregular movements of air and stock to the screens.

Try to maintain the supply of air without strong air currents in adjoining rooms. Pressure in the exhaust pipes will be low if the pipes are big enough. The pipes should also be as straight as possible; and outlets into the settling chamber should all be in the same general direction so that fans don't interfere with each other.

With air and stock feeding as uniform as possible, with a regular density of stock, there remains the important job of adjusting the pedal-feed regulator motion.

The Pedal-Feed Motion

The cone belt should be in the middle of both the driver and driven cones when the normal thickness of stock is being fed; and for the motion to operate successfully, this condition must be maintained. The motion depends on the position of the cone drums and the relative movement between the pedals and the cone belt.

Carefully measure the cone drums at the three most important positions of the cone belt—top, middle, and bottom. With these measurements, plus the thickness of the cone belt, the maximum range of material thickness that the arrangement is capable of handling can be found.

The thickness of the stock fed, multiplied by the surface speed of the feed roll, must always be constant. A constant can be used to calculate the comparative thickness of stock fed when the belt is at the top and bottom of the cones.

With N equal to the normal thickness, the comparative thickness is a simple ratio of the velocity rates. From

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How To Set the Pedal-Feed Regulator

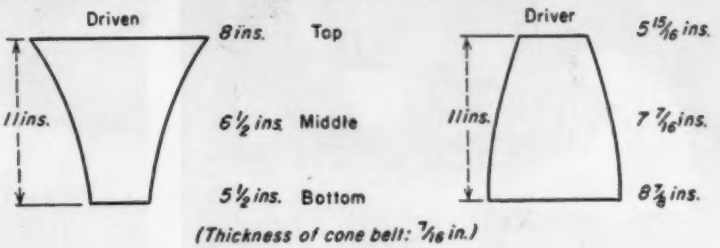

Fig. 1

STEP 1. Measure the diameters of the driven and driver cones at top, middle, and bottom. Then figure the velocity rates at each position. In this case, the top velocity will be: $\frac{8 + \frac{7}{16}}{5\frac{15}{16} + \frac{7}{16}} = 1.32$

The middle position figures out to 0.88, and the bottom to 0.66. These velocity rates allow compensation between ⅔ and 1½ of normal feed thickness.

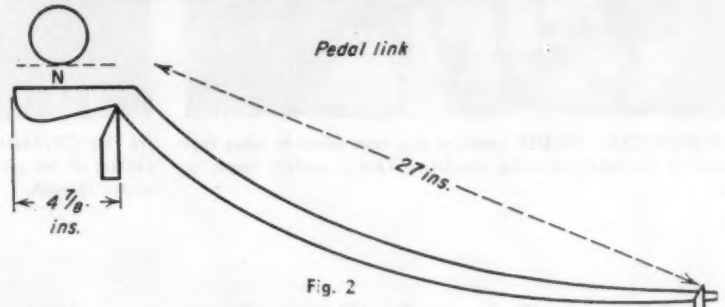

Fig. 2

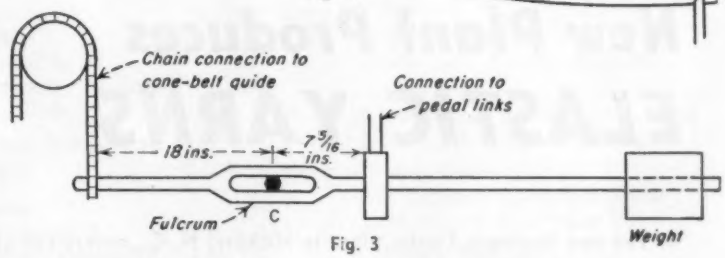

Fig. 3

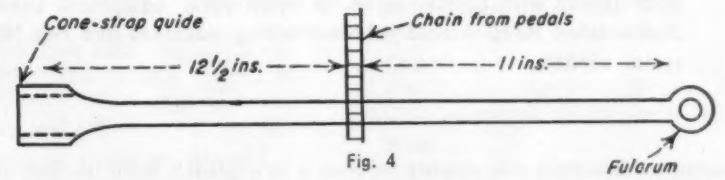

Fig. 4

STEP 2. The velocity ratio between the pedals and the belt guide can be calculated after the illustrated measurements are taken on the pedal-feed arrangement. In this case, the ratio is: $\frac{27}{4\frac{7}{8}} \times \frac{18}{7\frac{5}{16}} \times \frac{11 + 12\frac{1}{2}}{11} = 29.2$ **Since the velocity ratio is 16½/N (see text), the normal thickness is:** $\frac{16\frac{1}{2}}{N} = 29.2$. $\text{So } N = 0.5685$ ins.

If the normal thickness is not exactly 0.5685 ins., the velocity ratio between the pedals and the cone-belt guide is not correct.

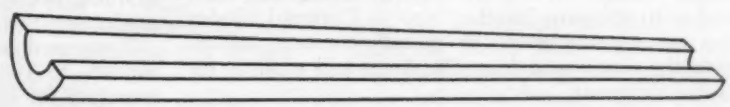

Fig. 5

STEP 3. To check the calculated figure, make a gauge to the calculated thickness and insert it between the pedals and the pedal roll. With the gauge in place, make the long lever in Fig. 3 level and adjust the cone-belt guide to the center position. Disconnect the strap guide from the regulator motion; but keep the weight in position to compress the stock, as under normal running conditions. At the same time, fasten the strap-guide mechanism securely to hold the belt in the center of the cones. Then make about 10 laps. The laps produced will be irregular, but the thickness of feed can be determined from their average weight.

NO. 50 UNIVERSAL WINDER transfers yarn from cones to tubes that are used on the rubber-covering machines. Yarn is cotton, rayon, or nylon.

IN THE COVERING OPERATION, a rubber strand passes through the centers of two yarn tubes that wind the yarn around the rubber as it passes through.

New Plant Produces ELASTIC YARNS

● The new Southern Elastic plant in Hickory, N. C., covers cut or extruded latex thread with cotton, rayon, or nylon yarn. Equipment consists of 10 double-sided H. H. Arnold rubber-covering machines and two No. 50 Universal winders.

SOUTHERN ELASTIC CORP. recently opened a new plant at Hickory, N. C., for producing elastic yarns used in surgical stockings, bathing suits, foundation garments, and men's seamless hosiery. The basic operation at Southern is covering cut or extruded latex thread with cotton, rayon, or nylon yarn on special rubber-covering machinery.

Equipment consists of H. H. Arnold rubber-covering machinery and Universal winding equipment. Southern buys yarn on cones and transfers it to tubes on a No. 50 Universal winder. When the rubber thread has been covered with the yarn, another No. 50 Universal winder with a special attachment to provide constant tension removes the elastic yarn from the skeins and winds it on tubes for shipment.

Rubber Is Stretched 500%

In the covering operation, the rubber is fed slowly and is stretched about 500% as the yarn is being wrapped around it. The rubber strand passes through the center of the tube of yarn, which revolves rapidly and winds the strand around the rubber with approximately 100 tpi. as it passes through. The rubber then passes through a second spool of yarn rotating in the opposite direction from the first; and since the second yarn is wound with the same degree of twist but in the opposite direction, the covered elastic does not tend to kink when tension is removed. The yarn is finally delivered on skeins.

Ten Covering Machines Used

The plant has 10 double-sided covering machines, and room is available for the addition of 10 more machines when necessary. There are a total of 1,600 producing spindles, two spindles producing one covered yarn. Total production is 4,000 lbs., per week.

Yarns used are 40s to 100s cotton, 50- to 100-den. rayon, and 40- to 100-den. nylon. Enough stock is carried in inventory for immediate delivery to mills in the area.

The building that Southern uses is relatively new and has 13,000 sq. ft. of floor space. It used to house a knitting mill. The plant runs three shifts, with about 20 employees and one overseer per shift.

The covering equipment is checked every 15 mins. for the stretch being produced on the elastic. Quality-control operations consist of removing the covering yarn from the elastic core and analyzing the yarns and the core for stretch and weight.

How To Dye ACRILAN Knitted Fabric

● Improved methods of dyeing Acrilan are the result of many trials with several classes of dyes. Selection of the proper dye and a suitable method enable the dyer to produce a full range of satisfactory shades.

FOR 100%-ACRILAN SWEATERS, selected dispersed acetate dyes are recommended for shades ranging from pastel to dark medium, except in cases where the pastels required are very light and bright. For light, bright shades, selected basic dyes are used.

All dispersed acetate dyes will readily dye Acrilan, but a careful selection is necessary to obtain the most satisfactory fastness properties. The dyeing method is simple and calls only for a conventional dispersion and straining of the dye in the drug room and a dyeing operation ranging from 40 mins. for light pastels to 140 mins. for blacks. The dyeing is done at the boil.

Dyebath assistants should be held to a minimum, and medium and dark shades should be scoured after dyeing for 20 mins. at 140° F. in a nonionic detergent and mild alkali to remove surface dye. Cooling back after dyeing should be gradual to avoid setting creases. No carriers are required with dispersed acetate dyes.

The following dispersed acetate dyes can be expected to produce from 20 to 40 hrs. lightfastness and 140° F. washfastness.

Blue	
Latyl Brilliant Blue BG	Up to 0.5% only
Amacel Blue Violet FSI	Up to 1.5%
Celliton Fast Blue GA	Above 1.5%
Celanthrene Blue BRS	Above 1.5%
Celliton Navy Blue BRA	For navy shades in 3% or above
Yellow	
Latyl Yellow YL Celanthrene Yellow GL 300%	Up to 0.5%
Gycoluce Yellow GH 200%	0.5% & above
Orange	
Latyl Orange R	Up to 0.5%
Acetamine Orange GR	1 to 2%
Red	
Celliton Pink RFA Celliton Fast Pink FF3BA	Up to 1.5%
Amacel Red FSI	0.75% to 3%
Celanthrene Cerise B	Up to 1.75%
Violet	
Latyl Violet BN	Up to 0.75%
Eastman Violet 5 RLF	0.75% upwards
Latyl Violet 2R	Up to 0.5%
Black	
Celliton Fast BTNA	3.5% upwards

Examples:

Pastel Pink
0.027% Celliton Fast Pink RF New
0.009% Celliton Fast Pink FF3BA

Pastel Blue
0.35% Latyl Brilliant Blue BG
0.075% Latyl Violet BN

Pastel Maize
0.08% Celanthrene Fast Yellow GL 300%

Pastel Turquoise
0.52% Latyl Brilliant Blue BG
.02% Celanthrene Fast Yellow GL 300%

Pastel Mauve
0.3% Latyl Violet 2R

Light Camel
0.028% Celanthrene Fast Yellow GL 300%
0.02% Celliton Fast Pink FF3BA
0.14% Latyl Brilliant Blue BG

Lime
0.3% Celliton Fast Yellow GL 300%
0.3% Latyl Brilliant Blue BG

Moss Green
2% Gycoluce Yellow GH 200%
1.8% Amacel Blue Violet FSI

Ensign Blue
2.4% Celanthrene Pure Blue BRS
0.4% Eastman Fast Violet 5 RLF

Dark Coral
0.75% Celliton Fast Pink RF new
0.17% Celanthrene Yellow GL 300%

Black
6% Celliton Fast Black BTNA

Basic Dyes Give Bright Shades

Basic dyes have a good all-around affinity for Acrilan and are used primarily for their specific property of brightness, but they are not used in Acrilan sweater dyeing except in cases where extreme brilliance of shade is required.

The application of basic dyes to Acrilan differs from that of other acrylics. Basic dyes have good affinity for Acrilan in that dyeing at less than pH 5 radically slows down the dyeing rate, and therefore the use of acetic acid is not recommended either in the dyebath or for dissolving dyes.

The most satisfactory method is to use 5% owg. of ammonium acetate to provide ideal pH conditions. The dyeing rate is dissimilar from that of other acrylics; and there is apparently

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Prepared by The Research Dept., Chemstrand Corp.

no temperature area of sudden strike, which normally gives rise to unevelness. The most satisfactory results so far come from dyeing in a dyebath set with 5% ammonium acetate and 0.5% Igepon T Gel at a temperature of 180° F. The basic dye is then added and the dry fabric run in. The temperature is raised to the boil slowly; and in the case of pastels, the shade can be achieved in 45 mins.

Thus far, the only dyes showing need for retarding have been in the pink range where the rate of dyeing is apparently somewhat more rapid than in the case of blues and yellows. Typical basic formulas are as follows:

Pastel Pink
0.06% Genacryl Red 6B
5% ammonium acetate
0.5% Igepon T Gel

Pastel Blue
0.2% Sevron Blue B
5% ammonium acetate
0.5% Igepon T Gel

Pastel Maize
0.1% Genacryl Yellow 3G
5% ammonium acetate
0.5% Igepon T Gel

Indian Turquoise
1.5% Diorlene Blue 5G
5% ammonium acetate
0.5% Igepon T gel

Where basic dyes are used in shades heavier than pastel, a post-dyeing scour in 0.5% Emulphor ON and 0.5% ammonia at 140° F. for 15 mins. is recommended.

Bright Red From Acetate-Basic Dye Mixtures

Although brilliant red shades can be obtained on most acrylics with basic dyes, relatively high dye costs are involved. In the case of Acrilan, however, there are two methods of dyeing brilliant red shades to considerably better advantage than is the case where 100% basic dyes are used.

Selected basic and acetate dyes have compatibility. By obtaining the color-shade weight with dispersed acetate dyes, basic red dyes can be used in the same dyebath to give the required brilliance at less cost than when 100% basic dye is used exclusively. The dyes, dissolved separately, are applied in a bath containing ammonium acetate and Igepon T Gel at the boil.

In the early stages of the operation, the acetate dyes show substantial exhaustion after 60 mins. The basic color then begins to take hold; and after a further 90 mins., substantial exhaustion is obtained to produce a jockey-red shade, which, of course, should be scoured after dyeing to remove surface dye.

An example of a jockey-red formula is:

0.75% Eastman Fast Orange GRN
0.18% Celliton Pink RFA New
1% Genacryl Pink G
5% ammonium acetate
0.5% Igepon T Gel

Acid Dyes Produce Bright Shades

An alternative and still cheaper method of dyeing brilliant red shades on Acrilan involves the use of an acid dye such as Fast Scarlet BA. A 2% dyeing is readily exhausted from a bath containing 3% owg. Palatine Salt O followed by three additions of 2% sulfuric acid at 20-min. intervals. Even though the dyebath may be fully exhausted, the sulfuric acid has the effect of producing increased color depth and shade brilliance.

After dyeing, the fabric should be neutralized at 90° F. in 6% owg. bicarbonate of soda and scoured at 140° F. with detergent added to the same bath. By this means, a shade of basic-color brilliance can be obtained at a substantially reduced cost.

Example:
2% owg. Fast Scarlet BA
3% Palatine Salt O
Dye 20 mins. at the boil and make three 2% sulfuric-acid additions at 20-min. intervals

Acid dyes can be used to substitute for basic dyes in other shades where depth and brilliance are involved.

Acid Premetallized Dyes Reduce Costs

Strong acid premetallized dyes such as the Neolans, Palatines, Gycolans, Calcofasts, etc. can be used to advantage on Acrilan sweaters, particularly where dark shades are involved. Although shades such as black, navy, maroon, dark green, dark brown, etc. can all be dyed with basic or acetate dyes, costs can be reduced by using the metallized types.

Dyeing Acrilan with metallized dyes is similar to dyeing 100% wool with these dyes. The dyebath is set with 3% owg. Palatine Salt O, and the bath is raised to the boil in 30 mins. Then 2.5 owg. of sulfuric acid is added, and this addition is repeated twice at 20-min. intervals. After 150 mins., good exhaustion can be expected. Neutralizing in 6% owg. sodium bicarbonate at 90° F. is followed by adding a detergent and raising the temperature to 140° F. for 10 to 15 mins. to remove surface dye.

Examples:

Black
5.5% Neolan Black WA conc.
3% Palatine Salt O
7.5% sulfuric acid (in three additions)

Navy
1.8% Neolan Blue 2G conc.
1% Neolan Red DRE
3% Palatine Salt O
7.5% sulfuric acid (in three additions)

What's Ahead — ATW Brief

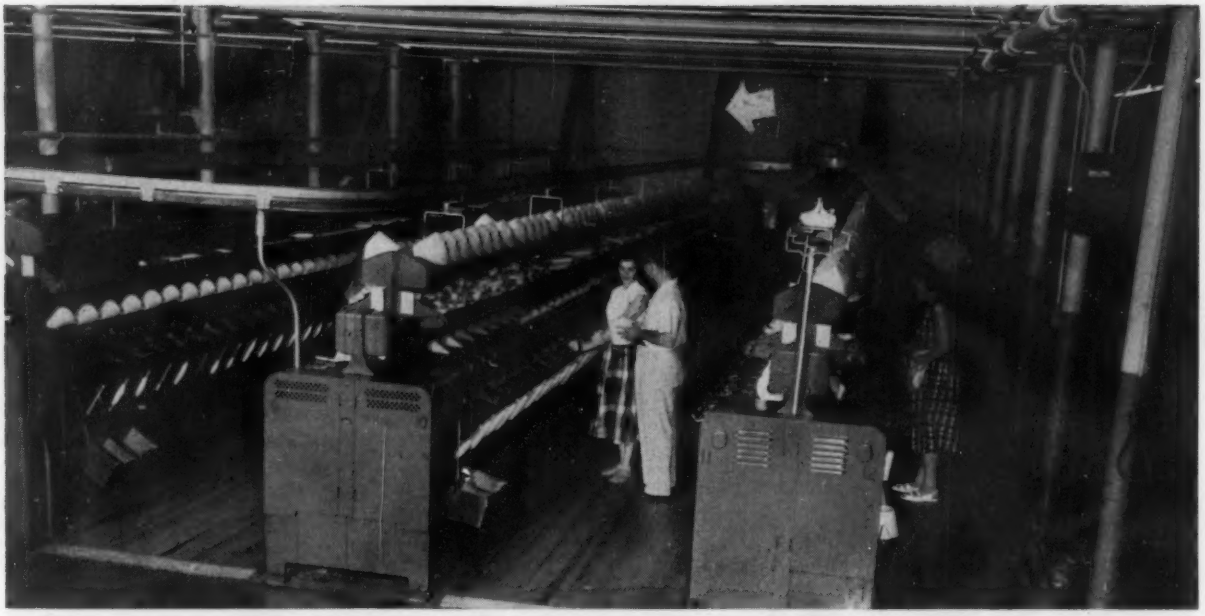
The basic change that industry faces today: instead of only substituting mechanical power for muscular power, we must begin to think in terms of giving machines the ability to see, measure, and control themselves without external action. Machines now can be endowed with the ability to measure thickness, strength, color, roughness, etc. It is therefore possible to let the machine modify its own process cycle to achieve a particular final result.

For instance, look at the looms that make fancy fabrics or rugs. Today all looms, without exception, depend on human action for the translation of the design into a language that the machine can understand. This language for a jacquard loom is a punch card; for another loom, it is a spool carrying multicolor yarns; in other looms, it is a drum. Loom languages are as different as the languages of human beings.

Engineers have only recently learned that machines can be made to read; but it is not difficult to visualize machines that, when given an artist's sketch, will produce automatically any kind of jacquard cards. Machines now in development automatically read a design and translate it into the language required by a class of rug looms.

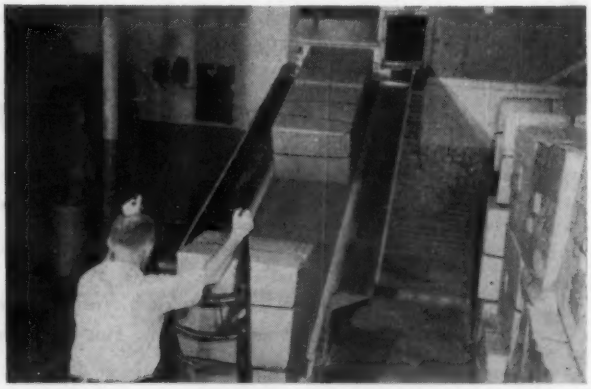
These examples represent just one of many ways of exploiting the ability to give eyes to machines. Many other applications can be visualized, for instance: matching colors, control of dyeing processes, etc. It is not too absurd to look at the future and see a mill with 300 or 400 looms controlled from a centralized position to permit instantaneous changes in the type of production.

(From a speech given by Georges F. Doriot at the annual meeting of the Textile Research Institute. Professor Doriot gave credit to Mr. Fabiani of Airborne Instruments Laboratories for the textile-application ideas.)



THE BASEMENT WINDER ROOM is located at the back of the mill underneath the spinning room. To handle material to and from the room, Plant Manager J. R. Timmerman (center) decided on chutes and conveyors instead of two elevators. Extensions (arrow) to the empty-bobbin conveyors on the Foster winders move bobbins up through holes in the spinning-room floor and drop them in boxes.

IN THE SPINNING ROOM, the conveyors from the winders drop empty bobbins into the boxes at the right. Doffers dump yarn into a chute for the winder room below.



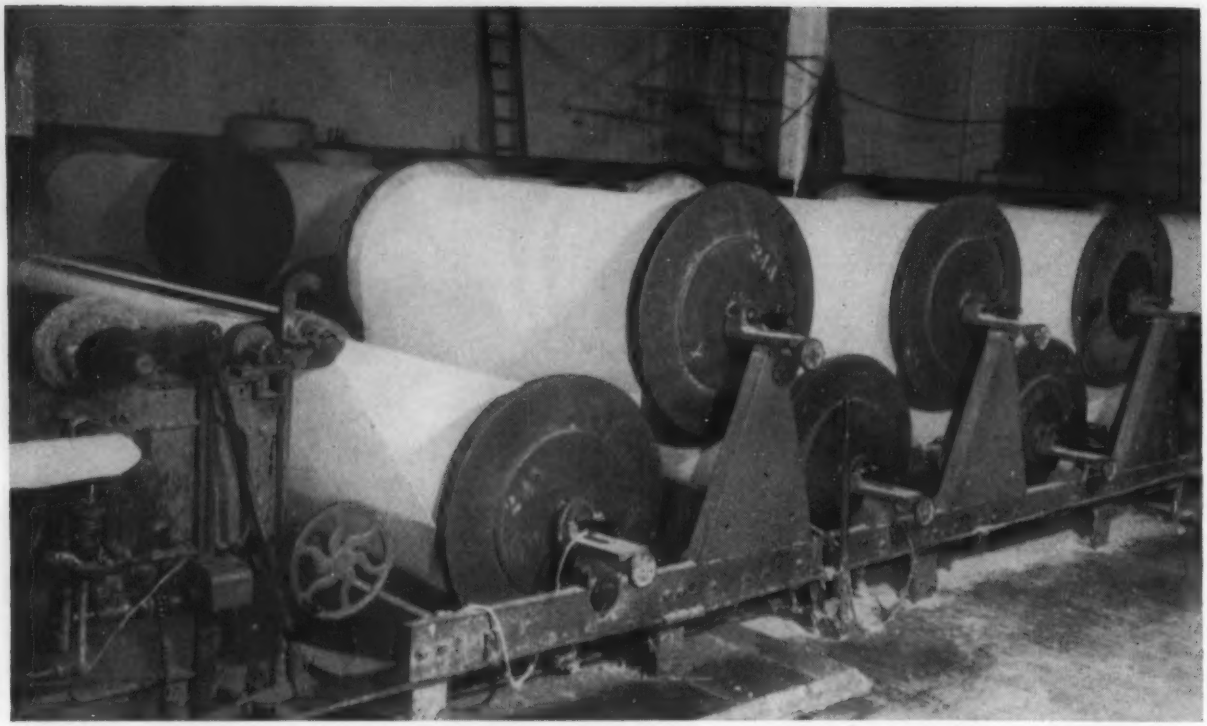
IN THE PACKING AREA, yarn cases are loaded onto an endless-belt conveyor to be carried up and out to the loading level. An elevator and bobbin hauler would have been more costly.

HANDLING MATERIALS
In a Basement Winder Room —

By **W. A. THOMASON, JR.,** Textile Engineer

Robinson Mills, Inc., Dallas, N. C., recently made extensive changes in the card room that permitted increased yarn production by installing more spinning frames. To get the necessary floor space for the frames, the mill officials decided to dig out a basement under the spinning room to use for winding and packing. This move provided space for 15 additional frames but created a problem of transporting material to and from the basement winding-packing room.

Plant Manager J. R. Timmerman considered putting in an elevator. Installation would have been rather costly, and a bobbin hauler would have been needed. He also investigated several other materials-handling ideas before he constructed the system now in use.



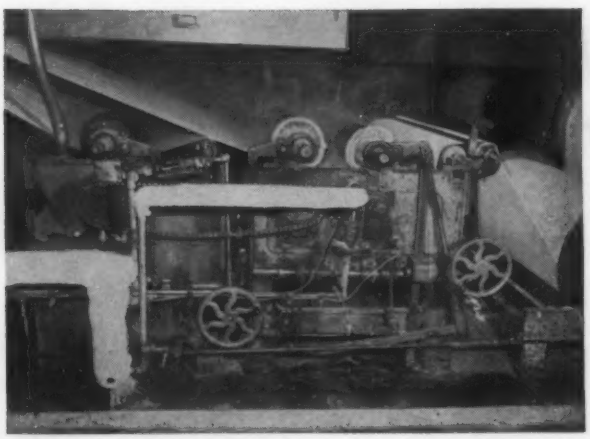
1 SECTION BEAMS have sash cords and weights for tension. There are 12 section beams to a set, and reverse- and regular-twist yarns are on separate beams.

Extra Slasher SIZE BOX Tints Reverse-Twist Yarns

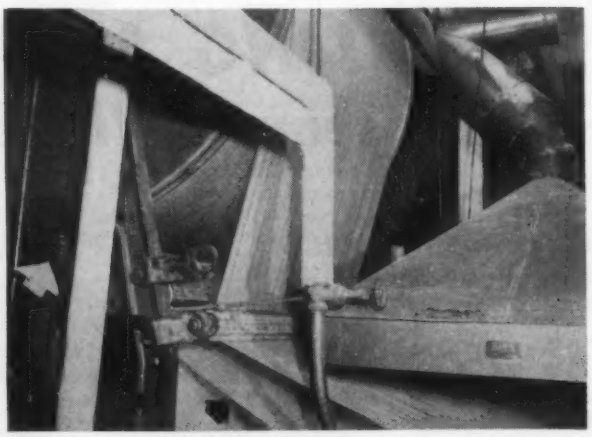
Reverse-twist ends combined with regular-twist ends in the same warp are tinted in an additional size box at the slasher at low costs. The outstanding costs are—

- $1,100 for an additional size box
- $1.17 for tint for every 21,000 yds. of yarn

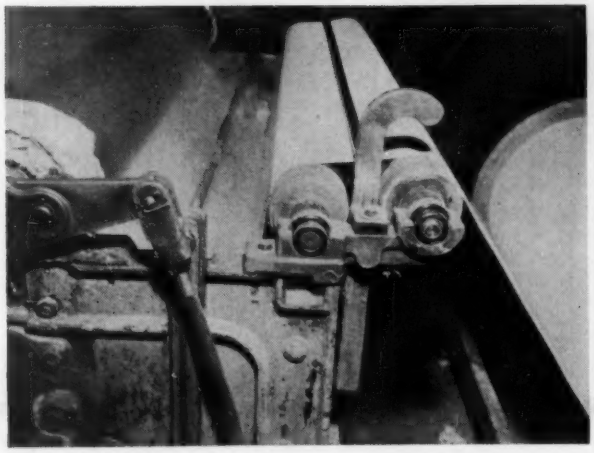
By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD



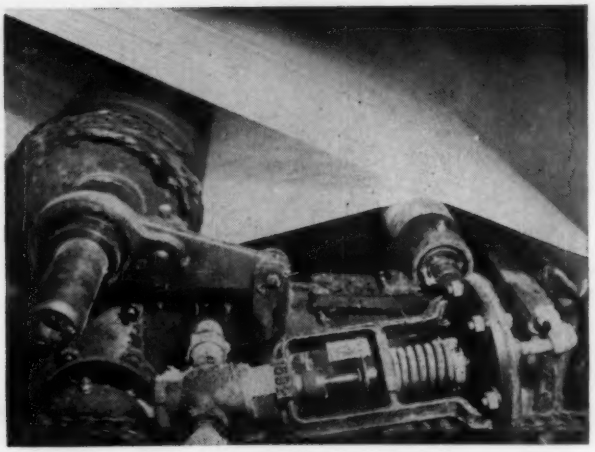
4 SECOND SIZE BOX (arrow) is set in between the original size box and the first cylinder of the slasher. The quetsch rolls are chain-driven from the first box.



5 TINTED WARP ENDS (arrows) are drawn down to the bottom center of the first cylinder. They contact the cylinder for 5 ft. before they rejoin the untinted yarn.



2 YARN SHEET containing both reverse- and regular-twist yarns is slashed direct from the section beams with regular size in Moultrie's conventional way.



3 SLASHED WARP is separated into reverse- and regular-twist yarns. Reverse yarns go through a second size box containing a tinting solution. A two-roll quetsch is used.

AN ADDITIONAL SIZE BOX installed on a Saco-Lowell three-cylinder slasher at Moultrie Cotton Mills, Moultrie, Ga., is permitting slashing reverse-twist and regular-twist cotton yarns and tinting the reverse-twist yarns in one operation. The tinted yarns are easily identified in weaving. The tint is water-soluble and easily removed in scouring.

Several combinations of regular- and reverse-twist yarns are being run on the slasher, including 8x8, 8x8x12-x12, 8x8x8x8x12x24x24. In every style of cloth, the reverse yarns are tinted evenly without bleeding on adjacent untinted regular-turn warp ends.

A typical style of cloth with both regular and reverse ends has 3,944 ends. Regular ends are 15s; reverse ends are 13.5s. The warp is run on 26-in. loom beams. The weave is a herringbone twill.

The additional size box was manufactured by West Point Foundry & Machine Co. and cost Moultrie Cotton Mills $1,100. Mill maintenance employees installed the size box in less than one day's time. The only other equipment added to the slasher are a used size-cooking kettle to mix the tint and a pump to pump the tint to the size box.

Size Box Fits in Easily

The additional size box is placed between the original size box and the slasher cylinders. It has only two quetsch rolls; and they're blanket-covered, as are all quetsch rolls at Moultrie. The bottom half of the lower quetsch roll is immersed in the liquid tint; the top roll is, of course, well above the tint in the size box. This arrangement tints the reverse-twist yarn and squeezes out the excess solution at the same time.

The blanket on the bottom quetsch roll is changed every one to two weeks. The top-roll blanket is changed every three weeks.

The reverse-twist yarn is tinted a bluish pink that contrasts strongly with the natural-colored regular-twist yarns. Du Pont Pontacyl Rubine R. Extra 125% Concentrate tint is used. One pound of tint (cost $1.17 per lb.) is used with 146 gals. of size. One batch of this mixture tints 21,-000 yds. of yarn.

Except for separation of reverse and regular yarns, there's no difference in the slashing methods in slashing yarns of all one twist and the mixed ones. Counting in ends requires a long time at the beginning of a set. But this same time is required if the ends are not tinted.

On the mixed yarns, the slasher speed is slowed down to 30 to 35 yds. per min. The same size formula is used that's used on ordinary warps with only one twist of yarn.

No extra employees are necessary to operate the slasher with the extra size box. The regular two-man slasher team consisting of an operator and a back man operate the slasher. The back man mixes the tint along with his regular duty of preparing size.

Ends Are Slashed Together

Reverse and regular yarns are run on separate section beams. They're kept separate at the warpers by being wound on different-colored cheese cores. On most styles of cloth, 12 section beams are run at the slasher.

Both regular and reverse yarns are slashed together in the regular size box. As soon as they come out of the original size box, they're separated; and the regular yarns go above the reverse ones and contact the first slasher cylinder about 5 ft. above the bottom center.

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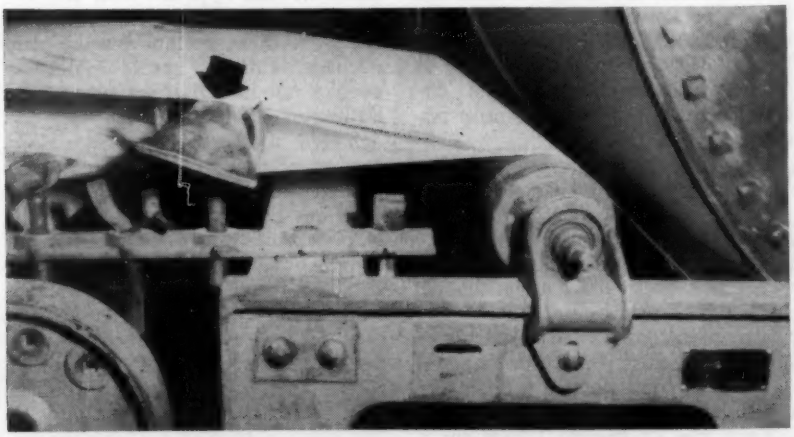


6 LARGE SPLIT ROD (arrow) divides the warp in half. The tinted ends go over the rod but are mixed with regular ends. The small rods separate the tinted ends.

A Simpler Method Of LAYING OUT Knitted Fabrics

● Plain squared paper is the only requisite for this easier method of laying out all types of knitted fabrics, including jersey, rib, purl, interlock, rack, tuck, and welt cloth

By ERNST PRUSA

At the Austrian Federal Institute for the Textile Industry, Vienna, we have been working on a new method of laying out knitted fabrics since 1948. This new method is more efficient, easier to understand, and takes less time than the methods used until now.

We use no special paper for the layout. We use five-squares-to-the-inch paper, which can be obtained from most stationery stores.

Most previous methods represented the stitch with a block, but we use the more adaptable longitudinal axis of the stitch. The plain stitches are traced as a thick line. We use a 1-mm. drawing pen. The reverse, or rib and purl stitches, are represented by a thin line.

In the technical layouts, these lines representing the stitches are put down in such a way that the thick lines, or the plain stitches, cover the vertical lines of the squared paper. In rib layouts, the thin lines of the plain reverse stitches are put down in the centers of the squares.

In purl-stitch layouts, the thin lines cover the vertical lines of the squares in the same way as the lines for the plain stitches. By using the lines and centers of the squares in the rib layouts and lines only in the purl-stitch layouts, we can see the difference in fineness between conventional rib-knitting machines and links-links machines of the same gauge.

Tucks and Floats

Tucks and tuck floats are drawn as dotted lines. Plain-stitch tucks are represented by heavy dots, and reverse-stitch tucks formed on the rib needles are shown by small dots. The floats are put down in the same places of the squared paper as the stitches.

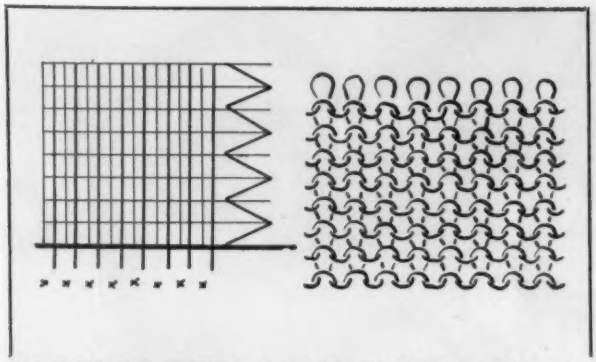
Welt stitches and welt floats are not shown on the layout.

Each row of squares stands for a course of stitches. The carriage direction, for flat machines, is indicated alongside the course. The knitting direction, color changes, and racking movements are also placed there.

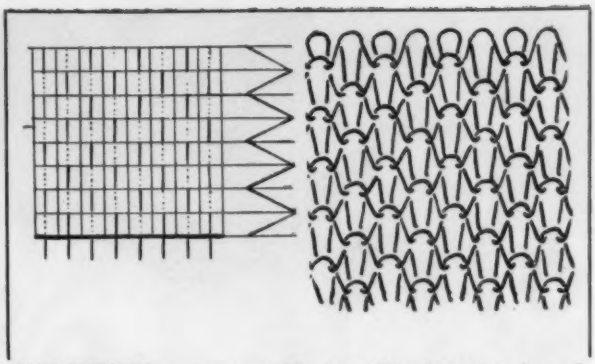
The needle set out is indicated below the fabric layout with the appropriate needles opposite their stitches. The top row of needles are the rib needles and the bottom row the plain needles. Empty needle slots or needles not in action are represented by crosses.

Tilted stitches, caused by racking one set of needles or by stitch transfer, are put down as inclined lines. This has not been possible with the blocks formerly used, and the layout of rack designs gives a clearer impression of the fabric. Interlock stitches are level; so the fabric is viewed from the side.

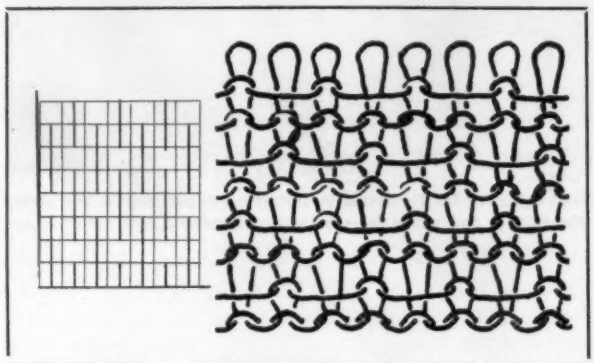
Outlined here are some of the basic stitches; with a little practice, you can use these stitches in combination with one another to give a clearer understanding of the more-complicated knitted fabrics.



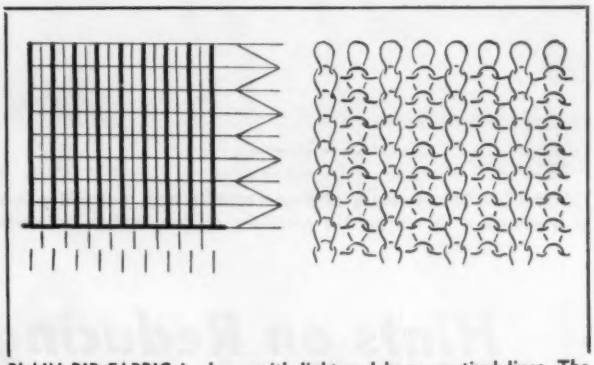
PLAIN REVERSE JERSEY is signified in this layout by thin vertical lines between the squares. The zig-zag lines represent the direction of the carriage movement. The needle diagram shows that the fabric was made on the back or rib needles.



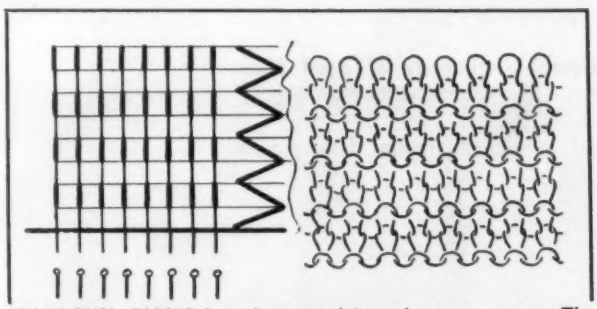
TUCK STITCHES are represented by dots. Thin dots are tucks made on the back needles. This knit-and-tuck cloth is made by tucking the odd needles on the first course and tucking the even needles on the second course.



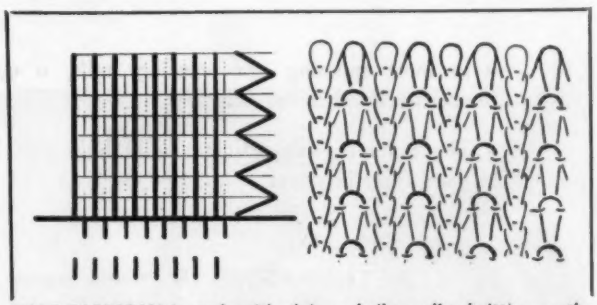
KNIT-AND-WELT cloth has alternating plain and welt courses. The first course is a plain course, and alternate needles welt on the second course. Welt floats are not marked on the layout.



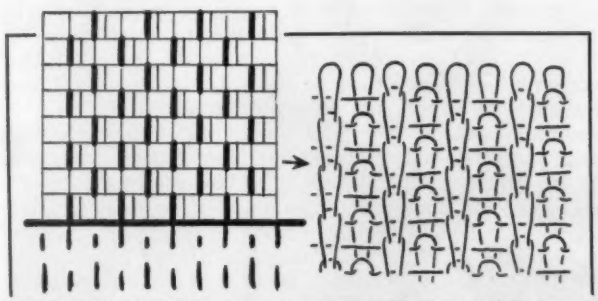
PLAIN RIB FABRIC is shown with light and heavy vertical lines. The thin lines represent the rib stitches. The thick lines are the plain stitches. This fabric is 1x1 rib.



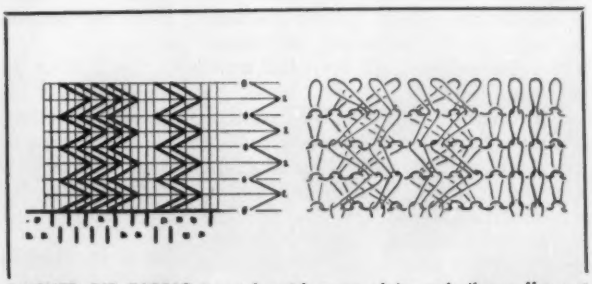
PLAIN PURL FABRIC has alternate plain and reverse courses. The thick and thin lines are drawn on the vertical lines of the squares. In the needle diagram, the lines stand for the jacks and the circles for double-hooked needles.



HALF-CARDIGAN is made with plain and rib needles knitting on the odd courses and the rib needles tucking on the even courses. The tucks are made on the rib needles when the carriage is drawing from right to left.



INTERLOCK FABRIC is made on machines with aligned plain and rib needles. As the rib stitches are directly behind the plain stitches, the layout is shown as it appears from the arrow. Long and short needles are used.



RACKED RIB FABRIC is made with some plain and rib needles out of action. The shogging movement is shown in the layout on the lines of the stitches knitted on the plain needles. Figures show extent of the rack.

GOOD COTTON can be saved if your opening room man will pick the bagging carefully. He should be instructed to put buckles and straps in a container. It will cut the possibility of fires, and you can weigh the buckles and straps for your waste records.

Hints on Reducing Unnecessary WASTE

- In most spinning and weaving mills, a considerable quantity of good fiber unnecessarily becomes waste
- The hints in this article should help you hold to the minimum the amount of good fiber in waste

By W. A. THOMASON, JR., Textile Engineer

A LOT OF FIBER WASTE, both reworkable and salable, that is made by mills can be eliminated. Good housekeeping, proper machine settings, good supervision, and waste-control education will keep the waste to a minimum.

The nature of the textile-manufacturing process necessitates some waste to maintain continuous production economically and, with most fibers, to maintain quality.

However, making waste is expensive; and the later in the process it is made, the more expensive it is, for not only is the raw material lost, but the cost of processing the stock that far is also a loss.

A good superintendent or manager often can pay his salary many times over by setting up a program to reduce the amount of waste his mill makes.

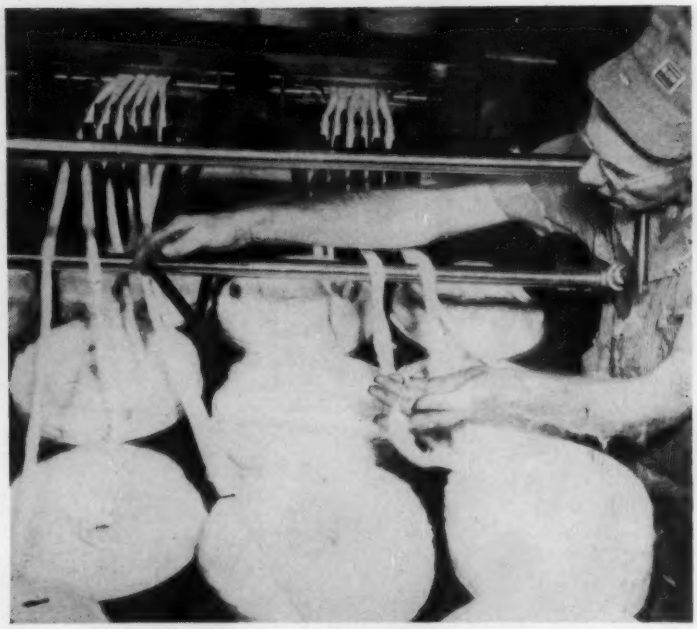
Good fiber unnecessarily becomes waste when it is taken out with undesirable material, sometimes because of bad machine settings and often because operators waste too much good stock during start-ups, piece-ups, and creeling.

Save in Opener Room . . .

Starting when the bales are opened, you can keep most of the good fiber from becoming waste. Be sure that your opening-room man picks the bagging and that he puts the buckles and straps in a container. The buckles and straps usually go to the scrap pile. It is a good idea to weigh them for entry on your waste report so that their weight will show up as such and not as invisible waste.

Waste taken out in opening and cleaning machines, pickers, cards, and combers should be inspected regularly. Few mills have Shirley Analyzers, but several testing organizations and textiles schools have them for public use. Tests of waste on the Shirley Analyzer will indicate nonlint content, and a staple diagram can be made of the lint to determine the length of fibers in the waste. Settings can be adjusted to

PICKER LAPS that are too soft or are stored too long are hard to straighten out at the cards. Your card hand may waste a lot of good cotton when he lays in a lap. Careless handling may also cause much lap waste.



BAD PIECINGS, as shown above, will cause either an end down because it will not draft or a bad place in the yarn. Good cotton will be wasted in either event because of the carelessness of the drawing operator. Operators should be told how expensive bad piecings are.

control the amount of spinnable fiber taken out as waste.

. . . At Pickers

Picker-lap waste can usually be reduced by good start-ups. Many mills use lap-pin holders that have oil-impregnated clearer-cloth surfaces. The operator rolls the lap pin in the holder before he starts a new lap, and the oil on the lap pin makes the cotton pick up immediately. This good start-up means that less of the butt end of the lap will have to be thrown away when new laps are laid in at the cards. The butt-end yardage that needs to be torn off can be held to 1½ yds. or less.

Pneumatic rack controls help make good, firm laps However, laps should not be stored for more than one shift

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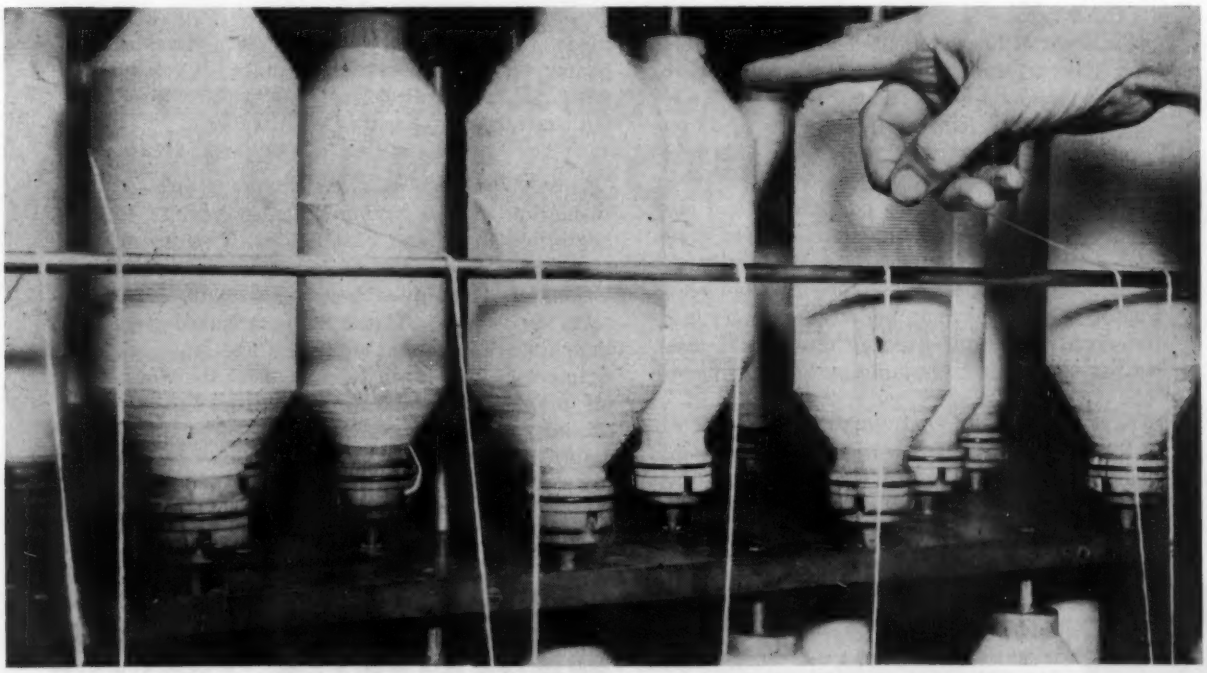
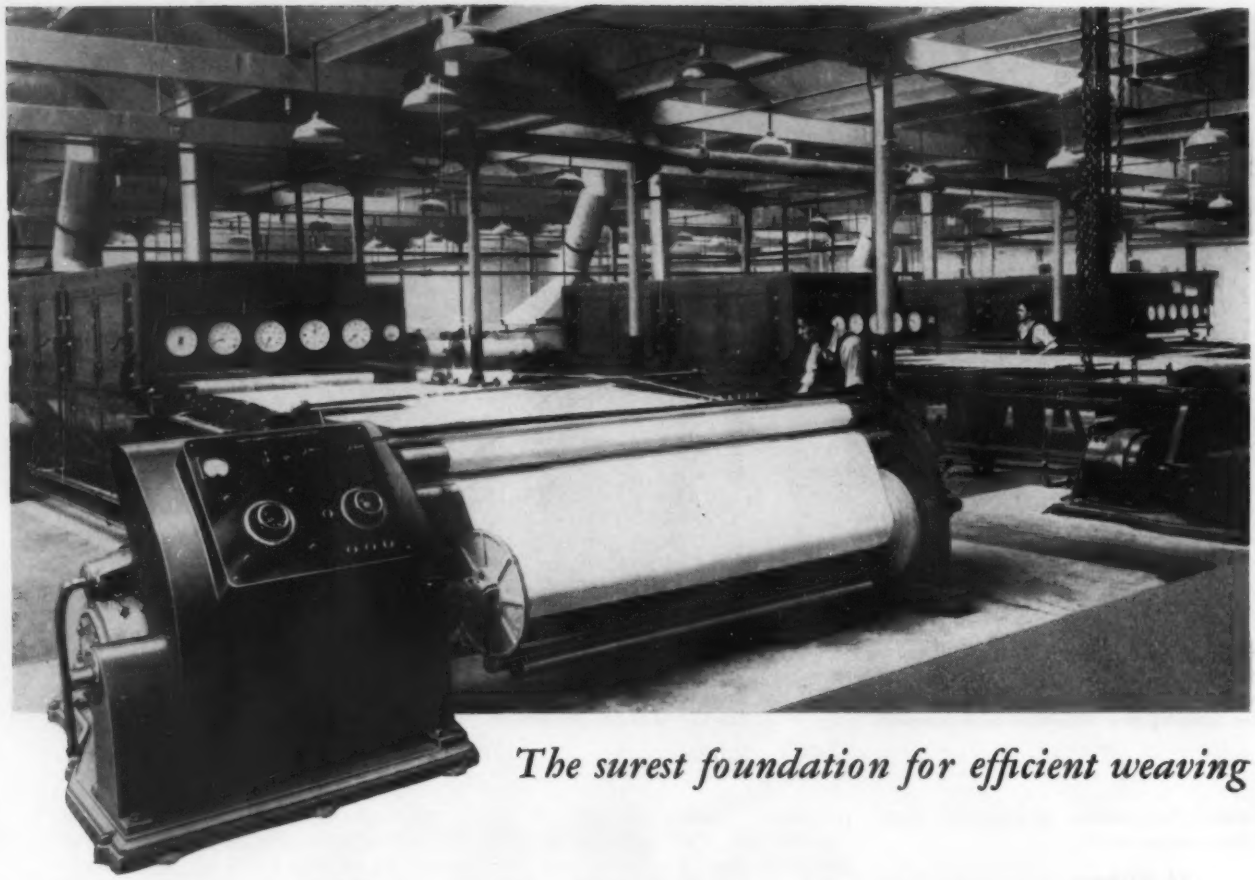


FLY WASTE gathered during roving storage may cause a slub in the yarn or the end to break down. To keep roving from loading with fly to the point that the waste gets back into the work, old roving should be worked off regularly and creels kept clean.



The surest foundation for efficient weaving

THE HIBBERT A12 SIZING MACHINE IS PRODUCING UNIFORM QUALITY WARPS AT 125 YARDS PER MINUTE

The latest Hibbert patented Sizing and Moist Air Drying Machine has many new improvements such as a new patented headstock drive. The instrument panel is in full view of an operator standing at the headstock. The draw roller can be run at any pre-determined speed between 6 and 125 yards per minute and also at crawl speed. A time lag starter gives gradual acceleration from stop to the pre-determined running speed. The torque of the beam motor gives a range of 20 pre-determined tensions. *Constant winding tension is maintained throughout the building of every beam.*

The completely automatic hydraulic press unit relieves the pressure when the machine stops and immediately applies the pre-determined pressure upon starting-up. The headstock is made for either 24″, 30″ or 36″ diameter beams, 36″ to 140″ between flanges. It can be arranged to take two beams at the same time. All bearings are of ball or roller type.

The patented yarn cooling system and efficient insulation of the drying chamber results in negligible steam and heat losses. The drying chamber is made from 56″ to 92″ wide. Four inspection doors give easy access to the yarn carrying rollers. Thermostatic regulation of temperature can be applied. The patented chamber cooling-down valve reduces the working temperature to room temperature in three seconds. The Shirley Automatic Size Box regulates the percentage of size applied to the warp. We will be pleased to forward you a well illustrated booklet on sizing. Please write us.

a. h.

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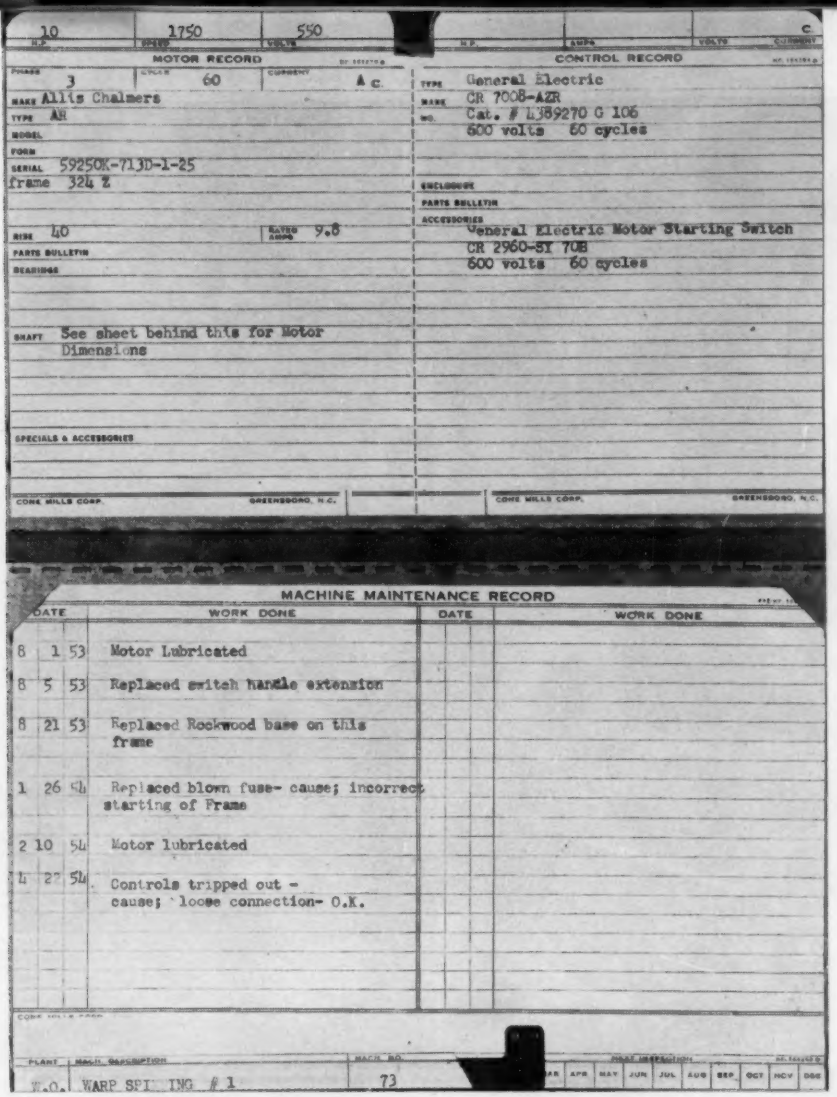


MOTOR RECORD

H.P. 10	SPEED 1750	VOLTS 550
PHASE 3	CYCLES 60	CURRENT A.C.
MAKE Allis Chalmers		
TYPE AH		
MODEL		
FORM		
SERIAL 59250K-713D-1-25		
frame 324 Z		
RISE 40	SERVICE FACTOR 9.8	
PARTS BULLETIN		
BEARINGS		
SHAFT See sheet behind this for Motor Dimensions		
SPECIALS & ACCESSORIES		

CONE MILLS CORP. GREENSBORO, N.C.

CONTROL RECORD

H.P.	
AMPS	
VOLTS	C
CURRENT	
TYPE	General Electric
MAKE	CR 7008-AZR
NO.	Cat. # L389270 G 105
	600 volts 60 cycles
ENCLOSURE	
PARTS BULLETIN	
ACCESSORIES	General Electric Motor Starting Switch
	CR 2960-SI 70B
	600 volts 60 cycles

CONE MILLS CORP. GREENSBORO, N.C.

MACHINE MAINTENANCE RECORD

DATE	WORK DONE	DATE	WORK DONE
8 1 53	Motor Lubricated		
8 5 53	Replaced switch handle extension		
8 21 53	Replaced Rockwood base on this frame		
1 26 54	Replaced blown fuse- cause; incorrect starting of Frame		
2 10 54	Motor lubricated		
4 27 54	Controls tripped out - cause; loose connection- O.K.		

PLANT	MACH. DESCRIPTION	MACH. NO.	PILOT INSPECTION											NO. TIMES OILED
W.O.	WARP SPI ING # 1	73	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

FILING POCKET gives the complete history of a spinning-frame motor. Records for other electrical equipment are kept on the same type of forms.

Records Help Maintenance of ELECTRICAL EQUIPMENT

Detailed records for motors and other major electrical equipment are set up to demand inspection and maintenance of the equipment regularly. The system is arranged so that it's easily adaptable to mill production machinery. The records require—

- **A file system with standard pockets**
- **A part-time clerk to control the files**

By J. DAN McCONNELL, Plant Engineer, and
J. C. CUMMINGS, Superintendent of Electricians, Cone Mills Corp., Greensboro, N. C.

AN ELECTRICAL-EQUIPMENT REGISTER providing a guide for scheduling preventive maintenance and accumulating the history of such work has been in use at the Cone Mills Corp. central electric shop at the White Oak Plant, Greensboro, N. C., since June, 1953. The pertinent information for the register was developed by notes taken over a period of time by maintenance electricians.

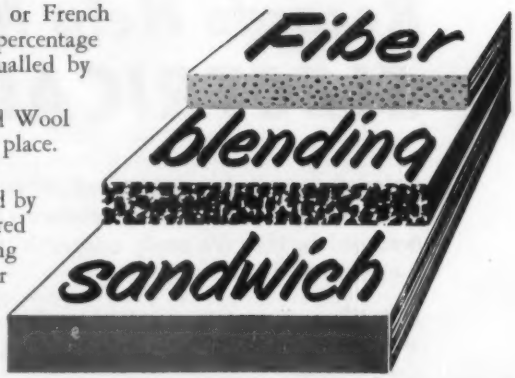
The record system contains data that give us:

1. A life record of electrical equipment
2. A record of the inspections made on the equipment and what is found

COLORS When blending dyed fabrics for the American, Bradford or French Systems of spinning, the Melangeur will accurately control the percentage of fibers and the sandwich blend produces a dispersion unequalled by any other machine.

OTHER BLENDS When blending Cotton and Wool, Synthetics and Wool or various types of Synthetics, the same intimate blending takes place. Doublings up to 10 per head are possible.

FASTER The *fiber to fiber* (instead of sliver to sliver blend) obtained by the Melangeur reduces the number of blending operations required with other equipment, thus lowering costs. When considering ways to improve blending, remember *Melangeur* is French for *Blender* and Societe Alsacienne de Construction Mecaniques manufacture this machine. We offer engineering, installation and parts service for the Melangeur and all preceding and following operations, an unequalled service to mills.



3 Dimensional Blending

In this *melangeur* (mixer intersecting), the different fibers are formed into a sandwich blend. Perfect regularity is obtained in all dimensions: cross sections at any point in the length of the sliver will not vary in composition. May we show you a blended sample, as delivered into this rectangular can or wound into a ball?

SOCIETE ALSACIENNE
DE CONSTRUCTIONS MECANIQUES
MULHOUSE, FRANCE

a. h.

Atkinson, Haserick & Co.
TEXTILE MACHINERY AGENTS & ENGINEERS SINCE 1822
211 CONGRESS ST., BOSTON 6, MASS.
1639 W. MOREHEAD ST., CHARLOTTE 2, N. C.

For more information, write direct or use Reader-Service post card.

MAINTENANCE of electrical equipment is scheduled by consulting the filing pockets. A red-plastic tab shows when equipment is to be inspected.

ACTUAL WORK on inspecting equipment starts when maintenance electricians pick up the work orders posted from the pockets by D. R. Hawkins, record man.

on each inspection

3. Information to keep track of spare equipment held in storage

4. Quickly available parts-ordering information

5. A method for keeping track of the physical condition of major feeders and circuit breakers

6. A provision to automatically remind us of inspection dates on equipment

The record system is arranged so that it can be extended from electrical equipment only to scheduled maintenance of any parts of the production machinery that management may wish to place on a scheduled maintenance setup.

Here Is the System

The record part of the equipment is a Kardex file system using the standard pocket with a full-size 8x5-in. card in the bottom position. The visible edge of this pocket has a clear-plastic tab that holds a separate card section to give the machine and location number covered by the particular pocket.

The bottom card is full size and contains the results of inspections to the equipment. Both sides of the card can be used to record this information.

The top leaf of the pocket contains a full-size card perforated in the center. One half section contains the motor data and machine location; the other contains control-switch data.

A third card slips behind the two half cards and contains special information on gear units for gear motors, couplings on hydraulic drives, and so on. It also contains the motor dimensions in notebook or sketch form taken from the motor manufacturer's frame number dimension-sheet information.

The opened pocket for a spinning-frame motor, for example, shows the motor-installation location, the type of switch installed with the motor, and the history card showing the record of inspections and lubrication. Other information given is the make, horsepower, speed, voltage phase and cycles, frame designation, model number, serial number, temperature rise, amperes per terminal, and any parts-bulletin information shown on the name plate.

The motor-control information covers the maker, class or type number, catalog or style number, ampere rating of relay heaters, and whether it's used with a fuse disconnect or circuit breaker. Other similar catalog-designation information is shown for the accessory equipment used such as push buttons, limit switches, brakes, or any other added equipment.

The motor and motor-control cards for a certain production machine show the information on the equipment there at the time. When a motor is burned out and is replaced by one from spare stock, the motor card has to be changed.

The System Works This Way

The motor card for a motor on a machine when the data was first listed is marked "Original installation Spinning Frame No. 18," for example. If the motor burns out, this sequence is followed:

1. An order for repairs is issued by a plant supervisor to electric-shop personnel.

2. The motor is sent to the electric shop for repairs, if necessary.

3. The motor card is withdrawn from the pocket file, attached to the repair order, and sent to the electric shop with the motor.

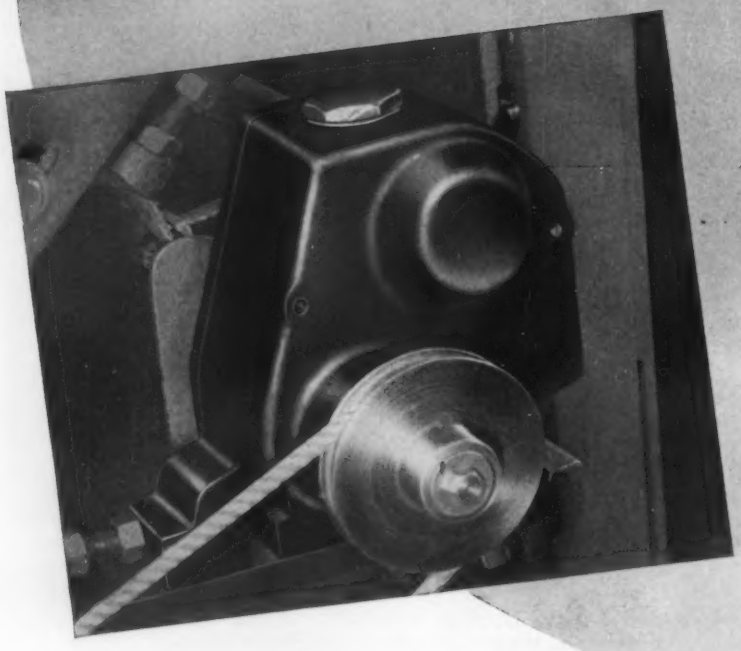
Then when the repairs are finished, the motor card gives a condensed story of the work done to the motor. When a motor receives a major overhaul, the motor card shows the repair order number so that it can be referred to for complete data on what is done.

The file card of the motor withdrawn from spare stock and placed on the machine is taken from the spare-stock file and inserted in the section of the machine pocket the

CONTINUED ON PAGE 186

NOW.. from SACO-LOWELL

A NEW ANTI-FRICTION COMB BOX AND FOOT END ASSEMBLY



Completely redesigned in accordance with the best engineering principles, following closely the bearing manufacturers' recommendations, Saco-Lowell now makes it possible to eliminate costly and frequent replacement of comb box components.

This new comb box provides smoother, cleaner operation and requires virtually no maintenance. Oil leakage is eliminated through the use of oil-proof seals. No adjustments of any kind are necessary to compensate for wear. Power consumption is extremely low and operation is extremely smooth.

A special anti-friction bearing foot end stand is a vital counterpart of the new comb box assembly. For the first time, a micrometer-type adjustment, both vertically and horizontally, makes possible perfect alignment of the comb.

All moving parts are supported by anti-friction bearings of adequate size and capacity to assure long life. Lubrication is through a splash-type oil system, as recommended by the bearing manufacturers.

This new comb box and foot end assembly may be applied to old and new Saco-Lowell cards, Saco-Pettee cards and other makes of cards now in the mill. Another Saco-Lowell advancement that is continued proof "It Pays to use Genuine Saco-Lowell Repair Parts."

Remember- IT PAYS TO USE GENUINE SACO-LOWELL REPAIR PARTS

SACO-LOWELL

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.

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Textile World
POINTERS
for
SUPERVISORS

Supervising Is an Art

● And like all arts, it is perfected by study and practice. For those who want to develop their talents, here are some fine points about sharpening skills in worker contacts.

By W. C. WESTBROOK, Consulting Editor, TEXTILE WORLD

Supervisors are promoted from the ranks for various reasons: because of their ability as workmen, because of long and faithful service, and sometimes because of influence exerted by friends or relatives. Whatever the reason, some of them keep their jobs, and perhaps advance further, through hard work and study. Others manage to hang on only because management doesn't want to admit a mistake by demoting them.

Regardless of how and why they got their jobs or how well they perform, supervisors think of themselves as practical men. Most of them would be surprised if they were compared with pianists or painters.

Yet supervising is an art—a more exacting art than either music or painting. It requires talent and skill and must be practiced daily, and the supervisor must learn to control the most complicated and unpredictable instrument in the world—the human being. Not only must he learn to be master of himself; he must also learn the likes and the dislikes, the ambitions and the failings, the strengths and the weaknesses, the foibles and the superstitions of the many people in his employ.

You Must Know the Job . . .

It is true that a good general knowledge of the work is essential to successful supervision. The supervisor should know something of the processes and procedures of the job. He should be familiar with company policies and departmental rules and regulations. He should have years of experience to back up the decisions he must make every day. However, these things can be learned just like any other trade or profession. It is in the worker contacts that supervision becomes an art.

The successful supervisor must be able to get things done just the way he wants and at the same time promote good employer-employee relations. Some people are gifted in this respect; others must learn it.

A much-repeated piece of advice in handling a personnel problem is to "put yourself in the other fellow's shoes." This trick is not always easy, especially if the personality, training, and background of those involved are entirely different. To see the other fellow's side of the question, it is necessary to be in tune with him. It's impossible to have harmony if one of the duet is off-key or does not keep time with the music.

One of the most-needed qualities for successful industrial relations is mutual respect. You have to remember that no matter how silly, illogical, or biased the other fellow's opinion may be, he is just as sincere in his belief as you are in yours. When a problem is tackled with this fact in mind, you may find that he is not as far off-key as he first appeared to be and that some of your pet theories need some tuning or rearranging.

. . . And the People . . .

The successful supervisor needs a kind of sixth sense to warn him when anything in his department is out of tune. There is the problem, familiar to all supervisors, of the reliable employee who suddenly goes sour without any apparent reason. He is often one who has worked for years with a minimum of supervision and has been expected to continue in the same vein indefinitely. Then suddenly the supervisor realizes that the employee's work has fallen off and is far short of past performance and that he is having disagreements with fellow workers, stays off the job, or begins to break established departmental rules.

The supervisor himself may be the cause of an employee losing interest in the job. He may be so preoccupied with his own problems that he fails to see or return the greeting of a subordinate at the beginning of the work shift. The employee feels hurt and insecure. He begins to imagine that the supervisor does not like him and looks for words and actions that will bear out his suspicions. He will begin to notice and to falsely interpret many things that he would formerly have ignored.

. . . And What Makes Them Tick

It is also possible that an employee has family or personal troubles and is so preoccupied with his problems that he doesn't realize his work is not up to par. Also, when an employee works at a monotonous or repetitive task for a long time without change, he can become bored, slow down, and become careless without even realizing the slow change in his work habits.

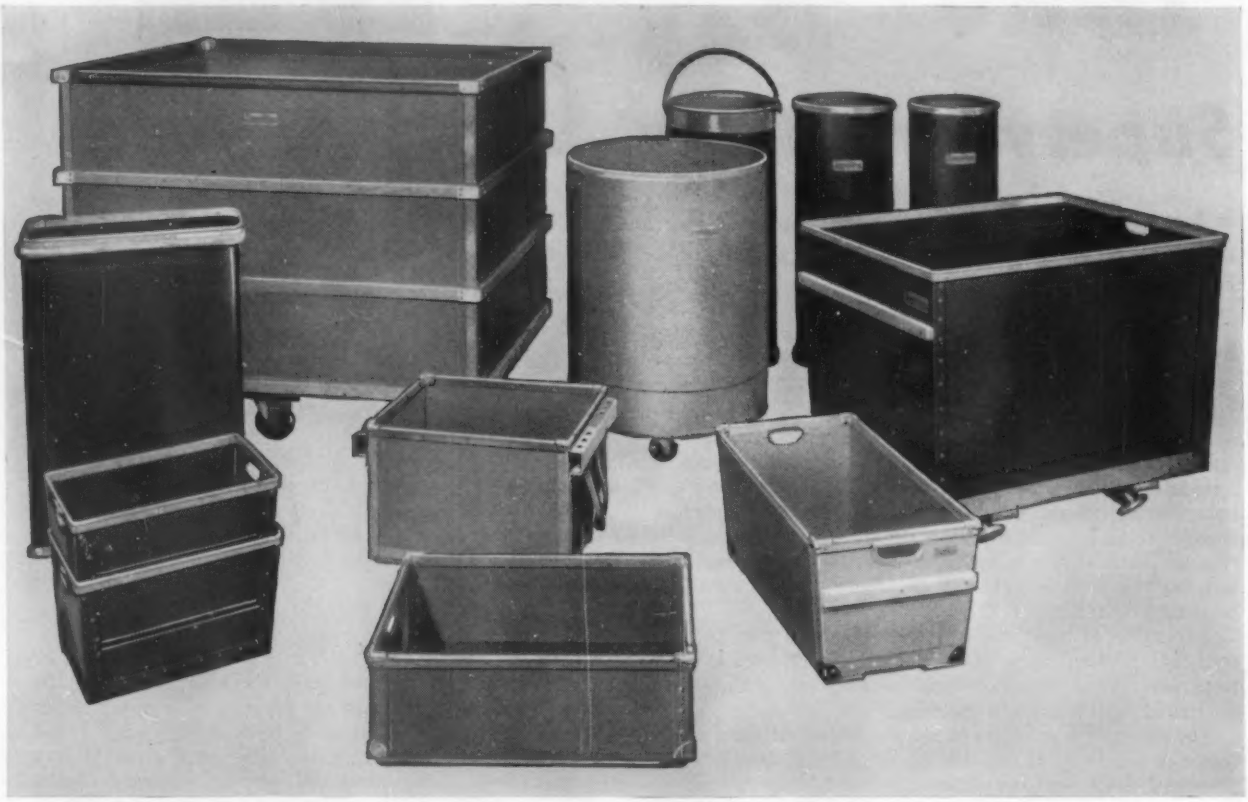
The supervisor who has learned the art will usually detect anything unusual in the behavior or work habits of an employee before a pattern has been set. A simple question about some phase of the job will often open the subject

CONTINUED ON PAGE 162

Spaulding

VULCANIZED FIBRE RECEPTACLES HAVE EVERY FEATURE DESIRED FOR

TEXTILE MATERIALS HANDLING



TOUGHNESS—high resistance to impact and abrasion.

SMOOTHNESS—won't splinter, won't snag materials.

LIGHTNESS—easy to move about.

RESISTANCE to oils, greases and moisture; won't rust or corrode.

Spaulding manufactures a complete line of mill trucks, boxes, barrels, baskets and cans all made of durable Spaulding Vulcanized Fibre. Where standard items do not meet special needs, Spaulding will build receptacles for you in exact conformity with your blueprints or specifications. Write direct or call your nearest Spaulding branch office for complete information on materials handling equipment and other Spaulding products for the textile industry.

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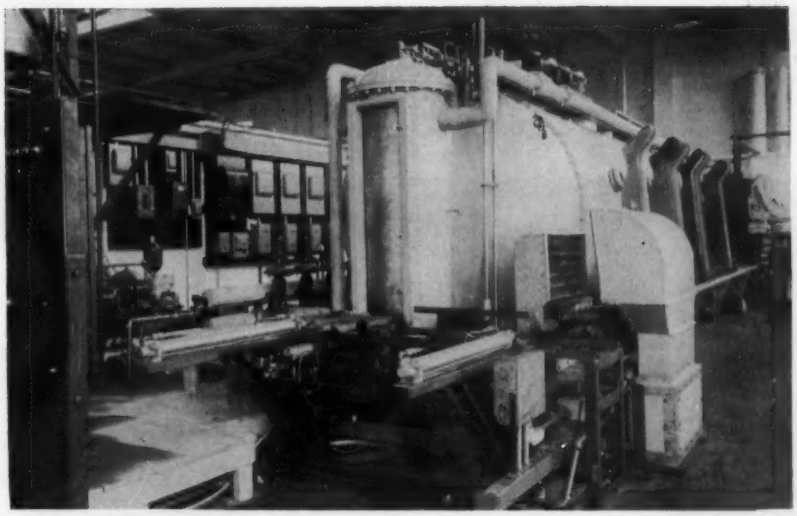
DO YOU WANT MORE INFORMATION? At the end of each item is a symbol consisting of the letter "T" followed by a number. If you wish additional facts about any item, circle the corresponding symbol on the Reader-Service post card, page 155, and mail the card to us.

Automatic Hosiery-Dyeing Machine



Proctor & Schwartz, Inc., Philadelphia, Pa., has developed the Proctor-Bailey Electrocolorset machine for continuous dyeing and finishing of women's hosiery. Production of 100 to 120 doz. pairs of hose per hour is possible, with automatic electronic control of the dye solutions.

In operation, the boarded hose move on small trucks into an airlock, where pressure is raised to correspond with pressure in the processing chamber.

The hose pass into the processing chamber, where they are scoured and given three rinses. The hose are sprayed with dye while under a pressure of 5 to 30 lbs. per sq. in. and temperatures up to 250° F. Dyeing is complete by the time the hose have reached the end of the chamber, and exit is through another airlock.

Finishing materials are sprayed on in the following drying compartment, and the hose are stripped off the forms as they leave the dryer.

Automatic operation of the process depends largely on the color-control system. Based on a specially modified spectrophotometer, the system scans the dye solution every 12 secs.; and if a variation from a previously selected standard is detected, dye is then added.

Color adds are supplied automatically from supply tanks of stock solutions of red, blue, and yellow dyes. Continuous circulation of the dye liquor through the control system and dyeing chamber insures uniformity.

Repeat shades are easily set up by reference to settings on the color comparator. Wide variations in shade from one batch to another are made within 3 to 4 mins. when a shade change is necessary.

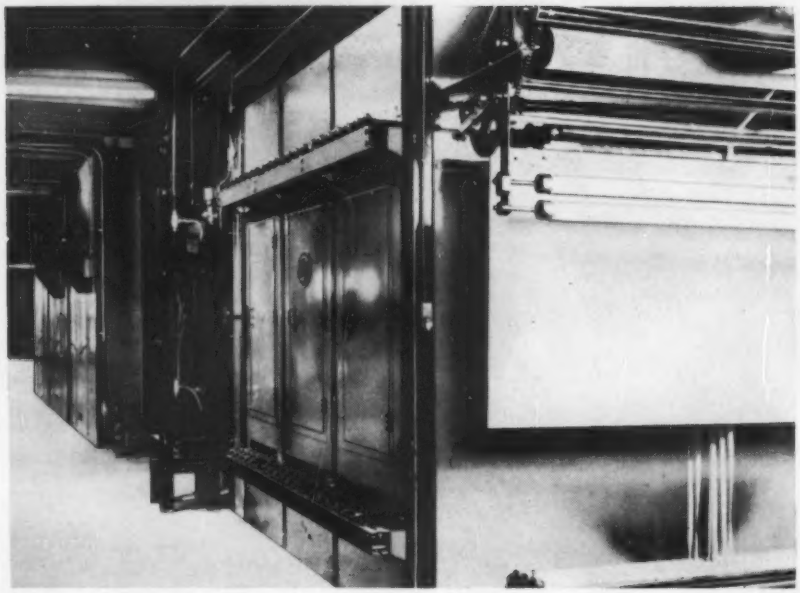
Production is interrupted by letting a certain number of empty trucks pass through the machine while the electronic controls adjust the dye liquor to the new formula.

Five boarders averaging 20 doz. pairs of hose per hour can keep the process flowing smoothly. Storage of four trucks ready to process with two in transit on the conveyor permit ample time for absence of any or all boarders for 15 mins.

Auxiliary equipment includes gray storage bins with separators and inspecting and packing facilities at the delivery end of the machine.

A normal operating crew consists of five boarders, two strippers, and an operator-colorist.

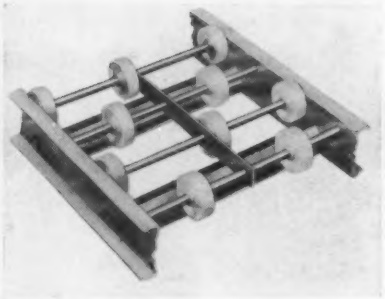
Floor-space requirements are 2,500 to 3,000 sq. ft. **(T-1)**



Curing-Drying Oven

A three-section curing oven made by James Hunter Machine Co., North Adams, Mass., is also an efficient drying unit. Holding 69 yds. of 40-in. fabric, the dryer removes from 720 to 900 lbs. of water per hour from cotton, wool, and other fabrics.

The gas-fired dryer delivers air to both sides of the fabric for even drying or curing. Fabric tension is low, and maintenance and operation are made easy by large access doors. The house is insulated to retain heat. **(T-2)**



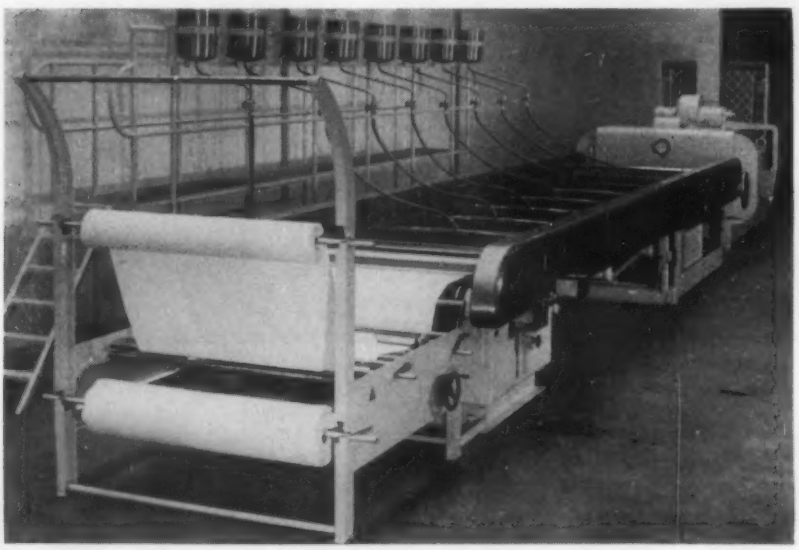
Conveyor With Nylon Wheels

A conveyor system with nylon wheels running in nylon bearings mounted in an aluminum frame is being made by Metzgar Conveyor Co., 455 Douglas St., N.W., Grand Rapids 4, Mich.

The conveyor is light in weight and is guaranteed against any weather conditions; it's said to withstand temperatures of 150° F. to −10° F.

The nylon bearings have little friction and are impervious to many acids.

The conveyor, Nylo-Wheel, is furnished in standard sizes of 12-, 15½-, 18½-, and 24½-in. widths and 5- and 10-ft. straight sections. Curves are furnished in 38½-, 61½-, and 91½-in. outside radius. **(T-3)**



Screen-Printing Machine

The Stork screen-printing machine developed by Gebr. Stork & Co.'s Apparatenfabrieck, N. V., Amsterdam, The Netherlands, is fully automatic. Cloth transport and squeegees are actuated by crank mechanisms with micro adjustments to insure perfect repeats and squeegee travel.

The screens are suspended on stainless-steel adjusting blocks that allow for adjustment in three directions during operation of the machine. The screens are not clamped and may be removed for color changes without losing the setting. The squeegees are mounted in a rigid light-alloy carrier by means of spring-loaded clips. All moving parts have ball bearings, and stainless steel is used for any areas coming in contact with print paste.

The printing colors are supplied by gravity from stainless-steel containers through flexible tubes to feeders. Provisions for application of adhesive in the required amounts to the back gray or return belt and a rinsing compartment that removes excess color from the back gray have been included.

Speed is quickly and easily controlled so that printing may be started slowly for checking and advanced to maximum speed when wanted.

The printed cloth is dried in a cabinet at the delivery end of the machine by hot air delivered by nozzles that direct air to both sides of the cloth.

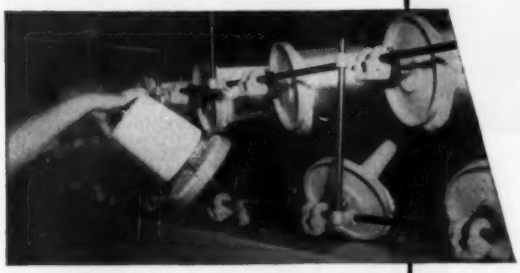
Capacity of the machine is 2,000 to 3,000 yds. per 8-hr. shift in lots of 300 to 1,000 yds. per color. The standard machine is designed to print five colors with a maximum 24-in. repeat, six colors with a maximum 20-in. repeat, and eight colors with a maximum 16-in. repeat. **(T-4)**

FOSTER-MUSCHAMP MODEL 66

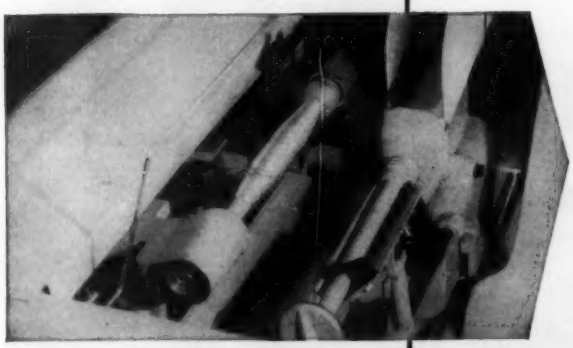
Automatic FILLING WINDER

(Made in Westfield, Mass., U.S.A.)

MODEL 66 FEATURES WHICH CONTRIBUTE TO LOW OPERATING COST



Magazine Creel for 4 lb. Cones



Automatic Donning and Doffing of Cones

Automatic Pinboarding

ALSO 15,000 R. P. M. SPINDLE SPEED

OPERATING COST

AS LOW AS ¼¢ PER LB. OF YARN QUILLED

For example, when equipped with magazine creel carrying 4 lb. cones, central bobbin hopper replenisher and automatic pinboarder or filling box stacker and when quilling 20,000 lbs. of 150 denier rayon in 40 hours the time required for operating labor is as follows:

	Time per Package	*Time for 20,000 lbs.*
Creeling in	.25 min.	1250. min.
Piecing up broken ends (1-½% breakage)	.11 min.	550. min.
Supplying pinboards	.0488 min.	244. min.
Other duties (5% tot. time)	.024 min.	120. min.
Personal time (5% tot. time)	.024 min.	120. min.
TOTAL TIME (1 operator 40 hrs.)	.4568 min.	2284. min.*

*Note there are 2400 minutes in 40 hours.

Standard hourly rate of 1 operator times 40 hrs. divided by 20,000 equals $ .0025.

Compare these figures with your own operating costs or with those of any competing automatic winder and decide for yourself if the Model 66 is worth investigating. Then learn all about its 8 POINTS OF SUPERIORITY; send for FOSTER FACTS — Volume 4 — Number 5.

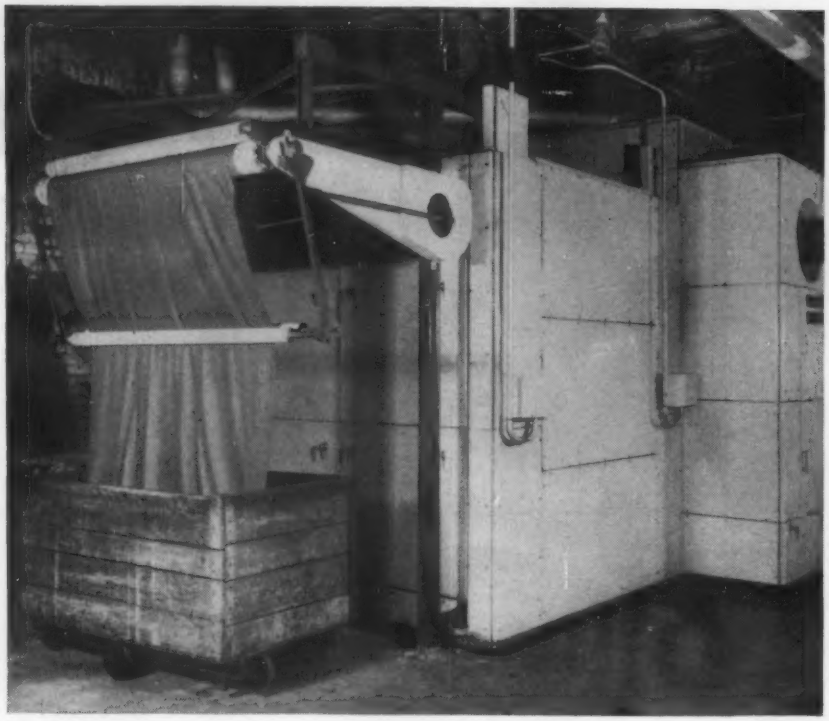
FOSTER MACHINE COMPANY

A Winder for Every Textile Purpose

Westfield, Massachusetts, U.S.A.

Southern Office—Johnston Bldg., Charlotte, N. C.

Canadian Representative—Ross Whitehead & Co., Ltd., 1475 Mountain St., Montreal, Que. and 35-37 King St. W., Toronto, Ont.



Curing Oven

Spooner Dryer & Engineering Co. Ltd., Manchester, England, offers a curing oven for resin-finished goods that incorporates a steam-heated predrying chamber and a curing chamber that may be heated by gas or electricity.

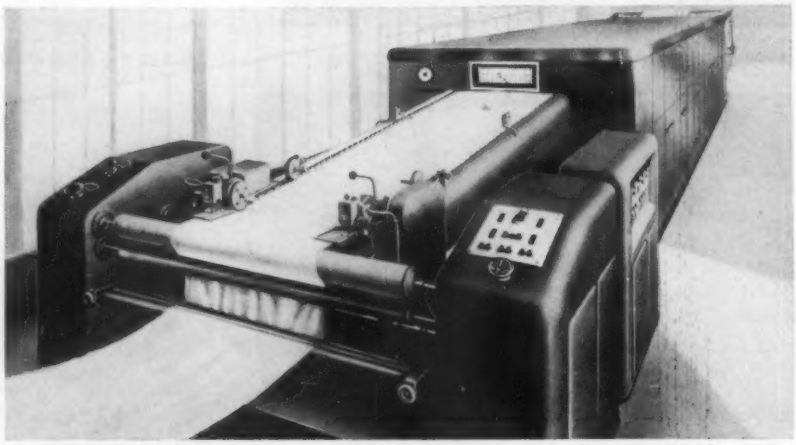
The predrying chamber in the Spooner unit removes all excess moisture in the fabric by conducting hot air through special nozzles that insure even drying and raise the temperature of the fabric. The cloth then passes into the curing chamber proper and is there subjected to the extra amount of heat required for curing. In the curing chamber, the heated air is directed upwards from nozzles situated in the floor and running across the width of the machine. A well-insulated cabinet insures the economical operation of the curing unit.

The choice of steam heat for predrying and gas or electricity for curing employs the most-efficient heat source for each operation. **(T-5)**

Tenter Frame

A tenter frame that combines efficient drying, heat-setting, and shrinkage-control features has been announced by Trockentechnik, Stuttgart, Germany. Centralized controls at the entering end of the tenter provide for all adjustments of speed, width, overfeed, and temperature. Auxiliary electric heat is provided for quick warm-up or to build up temperatures to 500° F. for heat-setting operation.

The tenter is sold and serviced by Alfred Hofmann & Co., West New York, N. J. **(T-6)**



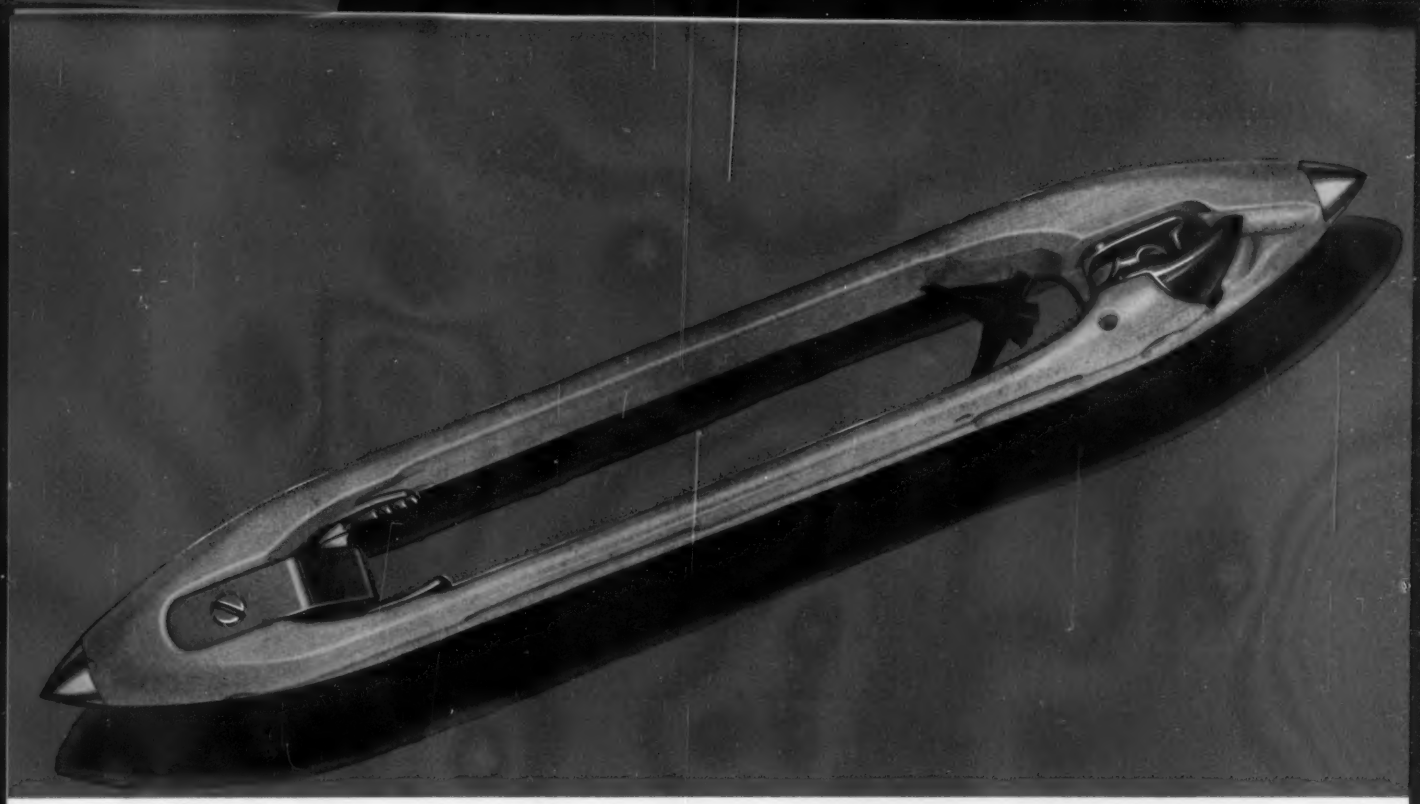
Doubler Guides

Homogeneous AlSiMag doubler guides for lighter and more-uniform tensions are now being offered by Titania Div., American Lava Corp., Chattanooga, Tenn.

These guides are designed to be used on abrasive yarns. Such yarns can be run at higher than normal speeds because chafing losses are reduced.

The doubler guides are usually specified to be made of AlSiMag 192, an ivory-colored nonconductive material. However, AlSiMag 193, a metallic-gray conductive material, also is available. The latter material is said to be helpful in controlling static electricity. Bright satin finishes are available in both materials.

The GE-17147 doubler guide illustrated fits into a special metal holder produced by M. J. McHale Co., 136 W. Market St., Scranton, Pa. The McHale line of holders makes the guides adaptable to a number of different machines. **(T-7)**



DRAPER *TRUE FLIGHT* SHUTTLES

ENGINEERED TO YOUR SPECIFICATIONS

. . . offer you *all the advantages* . . . because they are made from the finest raw materials by craftsmen who know your requirements.

The cotton shuttle illustrated is only one of 3000 types currently being manufactured by Draper Corporation.

Special Features Include:

1. Recessed Shuttle Spur	Furnished as specified, sharp, blunt, or semi-blunt.
2. Spring Assembly	Furnished with either single, or double bolt construction with shake-proof washer.
3. Bristles	Furnished as specified, Pig (large or small bunch), Horsehair, Regular Nylon, Fine Nylon, or Camel's Hair.
4. Side Eye Opening	Furnished with S. F. 29 Thread Bushing, or Nitrated, Chrome Plated or Phonograph Needle Steel Pins.
5. Shuttle Eye	See Below

Patented Recessed Shuttle Spur

Short eyes and L.H. wind versions of the eyes shown are available.

#274 Cast iron eye with straight steel scroll

#340 Cast iron eye with curled steel scroll

#347 Cast iron solid scroll eye

#370 Cast iron solid machined scroll eye

DRAPER CORPORATION

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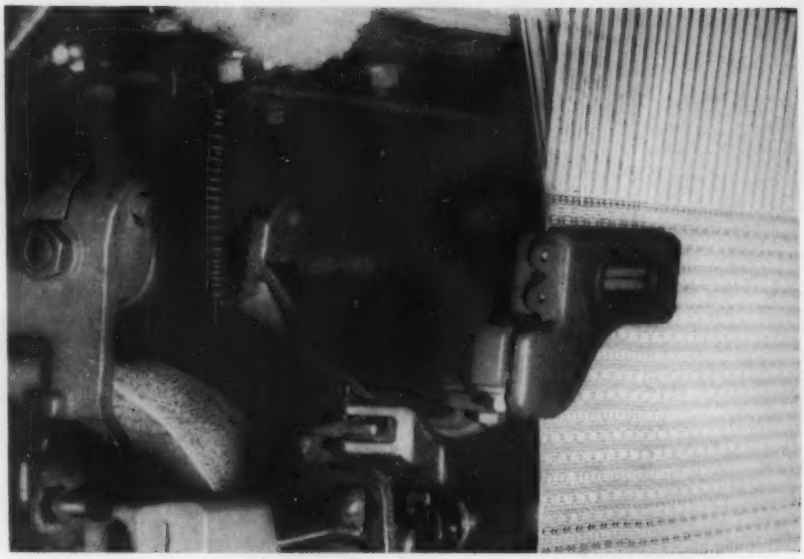
Loom Temple

An underslung temple that completely eliminates the chance of getting oil, rust, or dirt on the woven cloth has been developed by Draper Corp., Hopedale, Mass.

The temples need no lubrication and will not wear out of line. These features are made possible by torsional rubber bearings used to mount the temples on shafts below the woven cloth.

A new scissors-type thread cutter, included in the temple assembly, permits the filling to be cut closer to the selvage. This factor reduces the danger of drag-ins.

The underslung temple is currently available for XD-Model looms equipped with center-fork filling motions. (T-8)



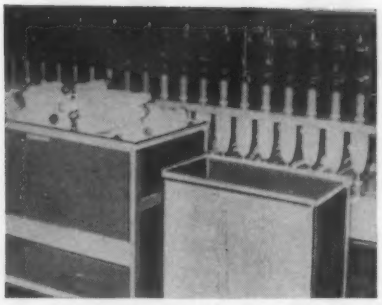
Glass Heat Exchanger

A 50-sq.-ft.-capacity heat exchanger made of Pyrex glass has been introduced by Corning Glass Works, Corning, N. Y.

The main tube of the heat exchanger is a 6-in. Pyrex pipe, within which 26 ¾-in. Pyrex tubes are supported by baffle plates at 6-in. intervals. Headers of Teflon and alumina ceramic are held in place by a Monel retainer ring and steel flanges secured with epoxy-resin-coated springs.

The unit requires a space 9x13¾ ins. x 12 ft. and weighs 165 lbs. empty. Water-to-water heat transmission is 195 Btu. per hr. per sq. ft. per Fahrenheit degree. Operating temperatures up to 375° F. on the shell side and 200° F. on the tube side are possible at working pressures up to 20 lbs. per sq. in.

The high corrosion resistance of all components minimizes the replacement of parts. Several units may be installed in series for greater efficiency. (T-9)



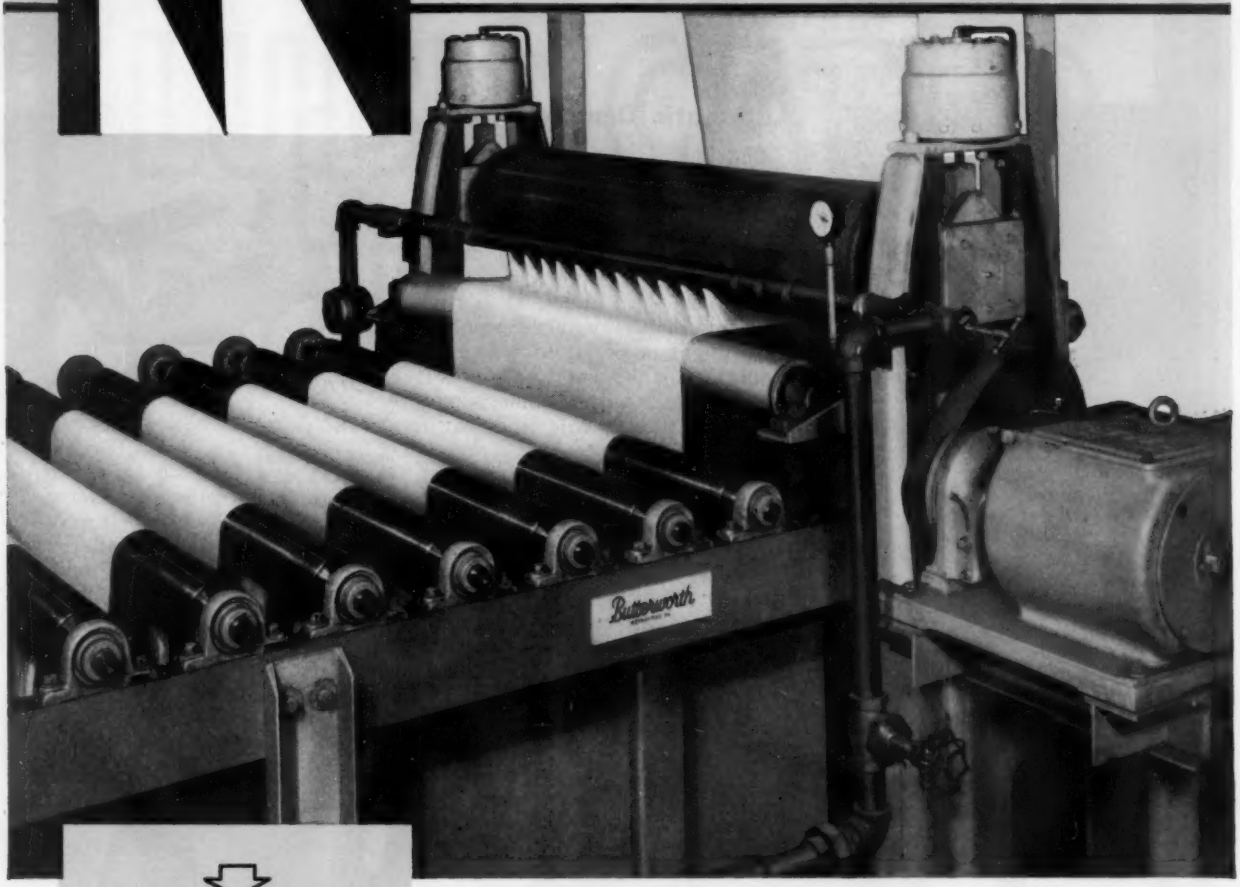
Combination Doff Truck

A combination doffing unit is now being made by Fisher Mfg. Co., Hartwell, Ga., with the tight and loose boxes that can be easily detached from each other. The doffed load can be moved on three wheels to the winder or spooler. The empty bobbin box then can be attached to another unit so that the operator can continue his doffing with a minimum of lost time.

The unit holding the doffed load can be equipped with a floating bottom to increase unloading efficiency. The unit may also be equipped with dumping hangers. The box is designed to hold a complete doff instead of the usual one-half doff from large-packaged frames. The tight aluminum box for holding empty bobbins has a floating bottom. (T-10)

Emerson

FAN-SHAPED SPRAY



Sprays every inch of cloth evenly in widths from 24 to 256 inches

Now there is complete spray coverage of every inch of cloth for every wet processing operation. No clogging at any time — every spray nozzle is kept clear by rotary action of brushes inside the pipe.

The famous Emerson Spray, used for many years with amazing success in the wet end of the paper industry, is now engineered for your wet processing machinery by Butterworth engineers.

One of the largest mills in the East bought an Emerson Spray to replace an ineffective shower pipe on just one machine . . . now they have installed 35. The Emerson Spray actually pays for itself in reduced water consumption, improved processing.

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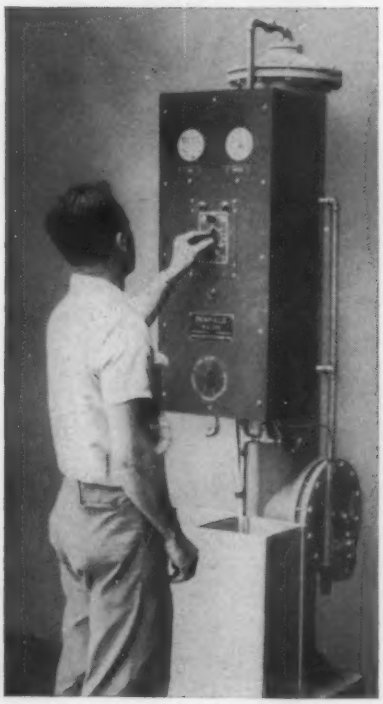
Draper Loom Pick Ball

More-uniform picking action is possible with the oval pick ball developed by Draper Corp., Hopedale, Mass.

The curved contour of the face of the improved pick ball eliminates excessive heel or toe picks. The ball is said to be of particular value to mills running X and X-2 looms where tracking troubles have occurred between the pick ball and pick-cam toes. **(T-11)**



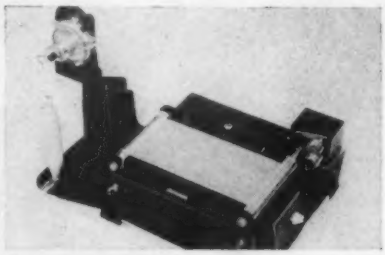
Automatic Demineralizer

The Penfield Mfg. Co., Meriden, Conn., has added to its line of industrial demineralizing equipment a completely automatic Mono-Column Demineralizer designed for users of 200 gals. per hr. of high-purity water.

The Penfield MA-200 Demineralizer is a compact unit that requires only a minimum of: (1) floor space, (2) connection of influent to the plant's water system, and (3) connection of effluent to those points where high-purity water is required.

Raw water passes only once through the mono-column of mixed cation and anion resins and is delivered at the effluent stripped of all its impurities. Condition of effluent is checked electrically.

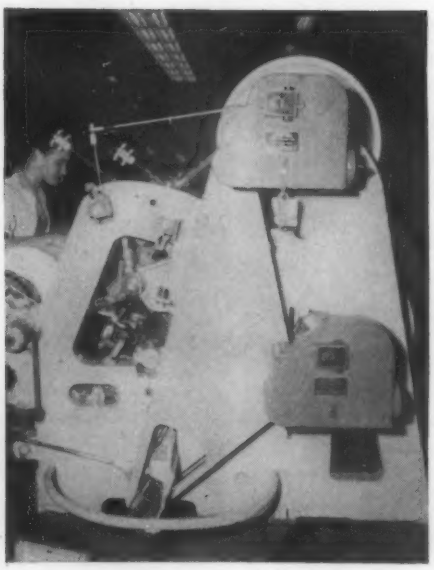
A flow meter on the influent can be set so that water intake is at an optimum rate for the most-efficient ion-exchange action, and a Penfield Electric Purity Meter plus automatic controls provide automatic control of the purity of the effluent. **(T-12)**



Yarn-Examination Winder

The Vitno-Winder, developed by G. Dikkers & Co., N. V., The Netherlands, and sold in the United States through Stellite American Corp., 60 E. 42nd Street, New York, N. Y., provides accurately spaced secure windings of yarn in a few minutes. The device uses a pair of grooved rollers, which keep the yarn from shifting its position.

Shadowgraphs of the yarn can be taken by inserting photographic paper in a holder that rests in the unit. Rollers with various grooves are available for different yarn numbers and different fibers. **(T-13)**



Automatic Warp Let-Off

Automatic warp let-off units, built by George E. Clentimack Co., North Attleboro, Mass., are suitable for all warp-knitting machines and for looms that require coordination between the feed and take-up units. The unit helps to rid fabrics of shade marks and give better control of fabric weights from piece to piece.

The units are driven by chains and sprockets from the machine camshaft. An eccentric device assures a uniform rate of yarn delivery irrespective of beam diameter. A lever on the eccentric carries an arm that supports two pawls. The pawls operate on two ratchet wheels.

When the machine runs normally, a shield carried on a flywheel behind the ratchet wheels prevents the pawls operating on the ratchet wheels.

The flywheel is connected to the yarn tension bar by a rod. If the warp yarns tighten, the flywheel is moved and the shield is removed from the fast pawl.

This movement turns the ratchet-wheel corrector shaft to speed up the transmission and deliver more yarn to the needles. **(T-14)**

POWELL VALVES . . . THE COMPLETE QUALITY LINE . . . POWELL VALVES

POWELL LUBRICATED PLUG VALVES

FIG. 3059G—300-Pound Steel Flanged End Valve. Sizes 6" to 12".

FIG. 1559—150-Pound Steel Flanged End Valve. Sizes 1" to 4".

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Powell Valves—the *complete* quality line—offer many outstanding features in these new Lubricated Plug Valves, such as quick and sure operation and a positive seal when the valve is closed.

Valves are available with screwed or flanged ends; single, screwed and bolted gland types, and in Semi-Steel, Carbon Steel, Bronze, Ni-Resist, Monel Metal, and Stainless Steel. Semi-Steel valves are rated 175 and 200 pounds W.O.G.; Steel valves, 150 and 300 pounds W.P. Sizes from 1" to 12". Valves in sizes 6" and larger can be furnished with gears for gear operation. Distributors located in principal cities. For descriptive literature—or help on valve problems—write direct to

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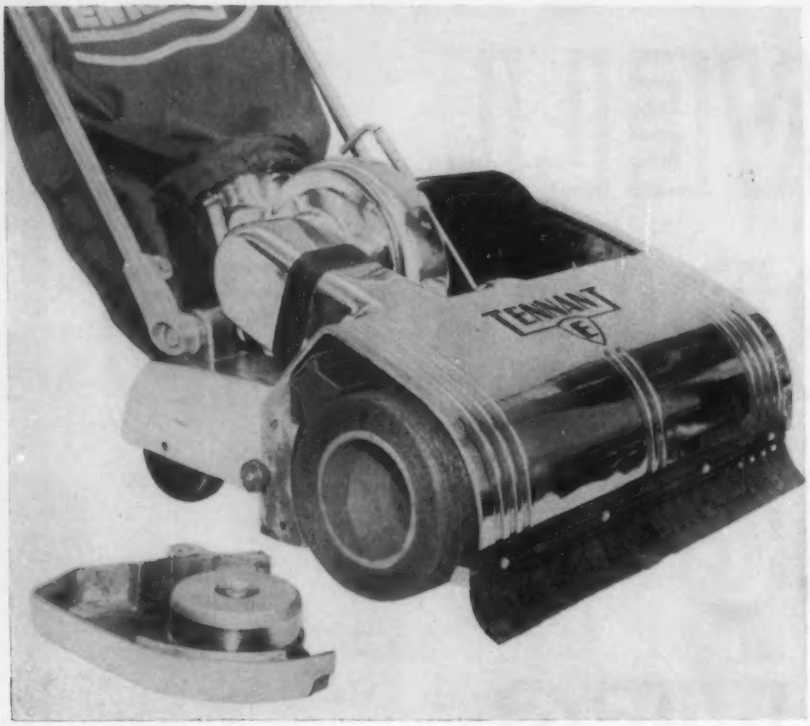
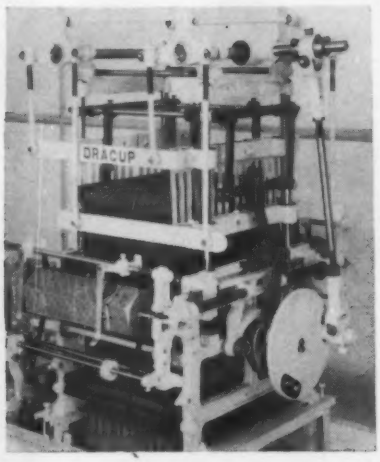


Vacuum Floor Machine

A vacuum-equipped textile floor machine that propels itself has been introduced by G. H. Tennant Co., 2586 N. 2nd St., Minneapolis 11, Minn. The machine cleans 21 ins. of floor in one trip and picks up dirt, dust, lint, and other soilage with a powerful vacuum action.

The machine is said to allow great speed in buffing weave-room alleys and other areas, since it is 50% faster than earlier Tennant machines. A 21-in. steel-wool cylinder is used for buffing. It is powered by a GE 1-hp. 12-amp. motor.

Ease of operation is a special feature. The operator merely guides the machine down alleys at a normal walk. No handle pressure or special control is needed because hood pressure is constant. The 1,125-rpm. steel-wool cylinder whisks off light dirt and oily spillage while a 3,450-rpm. fan picks it up. Flexible rubber skirts hug the floor to increase the vacuum action. The machine operates flush with walls and has a low hood. (T-15)



Open-Shed Jacquard

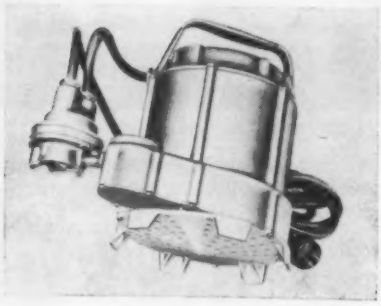
An open-shed jacquard has been developed by Samuel Dracup & Sons Ltd., Bradford, England.

The manufacturer claims that raising and lowering given warp ends at every pick of the looms is no longer necessary; warp ends are raised or lowered only when it's necessary to change their position in the woven cloth. For example, any particular warp end in the up or down position remains in the fixed position until the fabric pattern calls for the end to be moved.

The new jacquard is being made for warps of 400 to 4,000 ends. (T-16)

Micro Manipulator

E. Leitz, Inc., New York, N. Y., has announced a micro manipulator with a single one-hand control. Operated mechanically, the control is so precise that micro instruments can be kept within a 0.136-mm. field of view. Developed for biological, medical, and other fields, textile applications include examination of materials, fibers, and viscosity of solutions. (T-17)



High-Capacity Pump

A pump designed for many uses, such as draining flooded basements, is announced by Kenco, Inc., Loraine, Ohio. The pump is so light it can be carried in one hand, but it has a capacity for pumping 5,000 gals. per hr. at low heads. The pumps are available in 115- and 230-v. a.c. in three models for installations requiring continuous or manual operation. (T-18)

Argyle-Sock Trimmer

A rotary argyle-sock trimmer built by Ginsberg Machine Co., Inc., 224 Fifth Ave., New York 1, N. Y., trims and turns 240 doz. socks per day with one operator.

The operator slips a sock on a mandrel and removes it after it is automatically trimmed; the sock is turned as it is removed. The socks are then placed on a tray that holds 1 doz. socks.

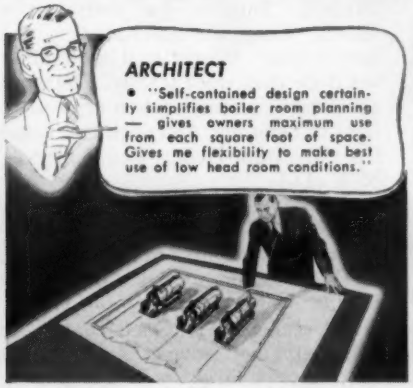
The machine can be operated with large suction turbines or as a self-contained unit. (T-19)

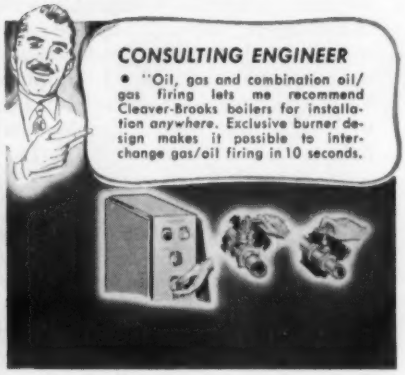
CONTINUED ON PAGE 206

CLEAVER-BROOKS SELF-CONTAINED BOILERS HAVE THE FEATURES EVERYONE WANTS!

...which feature would be most important to you?

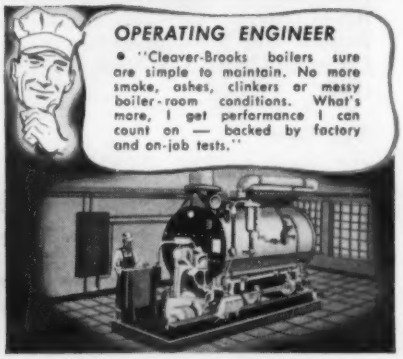
PLANT OWNER
• "Cleaver-Brooks boilers are tops in fuel economy! Forced-draft, four-pass construction and 5 sq. ft. of heating surface per boiler H.P. assure me 80% operating efficiency when firing with oil."

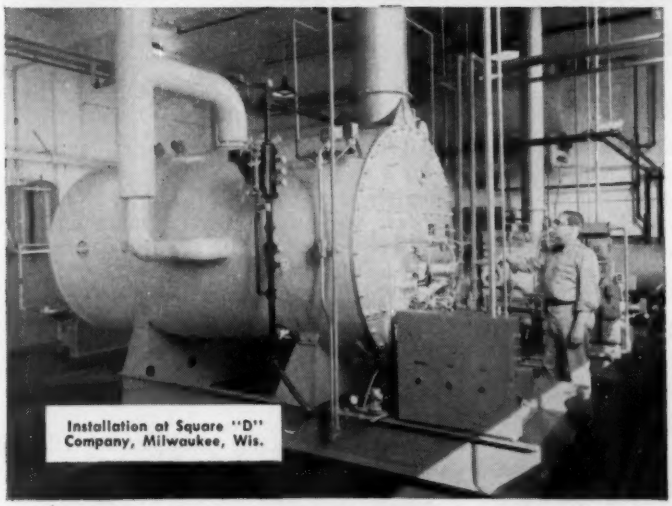

ARCHITECT
• "Self-contained design certainly simplifies boiler room planning — gives owners maximum use from each square foot of space. Gives me flexibility to make best use of low head room conditions."


CONSULTING ENGINEER
• "Oil, gas and combination oil/gas firing lets me recommend Cleaver-Brooks boilers for installation *anywhere*. Exclusive burner design makes it possible to interchange gas/oil firing in 10 seconds.

CONTRACTOR
• "Boilers are shipped ready to install. With service lines in, my crews have boilers ready for operation in 24 hours or less after delivery. No foundation or stack problems. Cleaver-Brooks furnishes starting service, too."

PLANT SUPERINTENDENT
• "I get all the steam I need for fluctuating steam demands, from full load down to 30% of rating. Automatic burner controls assure instant firing. I call that *real* dependability."


OPERATING ENGINEER
• "Cleaver-Brooks boilers sure are simple to maintain. No more smoke, ashes, clinkers or messy boiler-room conditions. What's more, I get performance I can count on — backed by factory and on-job tests."


Installation at Square "D" Company, Milwaukee, Wis.

THESE are just a few of the many outstanding features that have made more than 15,000 individual Cleaver-Brooks self-contained boilers *first choice* for commercial, institutional and industrial applications. Get in touch with your nearest Cleaver-Brooks representative for complete facts, or write for catalog AD-100. Cleaver-Brooks Co., Dept. H, 361 E. Keefe Ave., Milwaukee 12, Wis., U.S.A. — *Cable address: CLEBRO — Milwaukee — all codes.*

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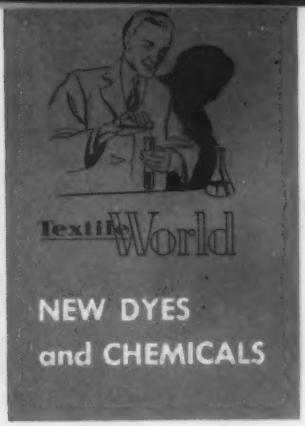

Polyethylene Emulsions

Resin Modifiers . . . a series of polyethylene emulsions compatible with thermosetting resins improve tear strength and abrasion resistance and reduce harshness of hand. Improve luster and embossing potential of cottons and rayons. Aquex Development & Sales Corp., Whippany, N. J. (D-1)

Antimicrobial Compound

Sub-Du . . . a nontoxic compound substantive to natural and synthetic fibers. Acts as a deodorant and mildewproofing agent by preventing bacterial growth. Will not affect shade or hand of fabrics and is applied in conventional equipment. Recommended for dress goods and hospital and baby products. Wilcris Chemical Corp., New York 17, N. Y. (D-2)

Vat Dye

Calcosol Golden Orange 3G Paste . . . has generally good fastness properties, is stable to soaping and heat, and shows little change if goods are resin-finished. Suitable for cotton-rayon blends. Color is slow-exhausting and level-dyeing. Works well with other vat dyes; dyes wool readily. Does not affect fabric strength when exposed to light or chlorine. American Cyanamid Co., Dyestuff Dept., Bound Brook, N. J. (D-3)

Direct Dye

National Solantine Green B L . . . excellent solubility; yields moderately bright shades of green on cotton, rayon, and leather. Good fastness to light, rubbing, stoving, dry and wet heat, dry cleaning, and perspiration. Fast to water and sea water. Suitable for carpet yarns, hosiery, bathing suits, upholstery, and materials to be rubberized. National Aniline Div., Allied Chemical & Dye Corp., New York 6, N. Y. (D-4)

Vat Dye

National Carbanthrene Black-Brown VA Paste . . . produces blackish-brown shades on cotton and rayon of excellent fastness to light and most wet processing. Reduces at 120° F. in an alkaline bath and is usually dyed at this temperature. Suitable for pressure-dyeing or pigment-pad methods. Recommended for materials to be resin-finished and where excellent fastness to light and commercial laundering is required. National Aniline Div., Allied Chemical & Dye Corp., New York 6, N. Y. (D-5)

Nonionic Softener

Melltone RH . . . readily dispersible in water at 80 to 90° F. to give softening and lubricating qualities to thermosetting-resin formulas. Compatible with products used in most dyeing and finishing operations. Will not foam at high speeds, affect light fastness, or develop odor. Can be used as a straight finish. Excellent antistatic properties and resistance to scorching. Crown Chemical Corp., Providence 3, R. I. (D-6)

FOR MORE INFORMATION, circle the D-number on Reader-Service post card.

The Fortset Resin Finish for SPUN RAYONS

One of the latest products to come from independent research in the field of improved finishes for spun-rayon fabrics is Resin 13. Developed at the Old Fort Finishing Div. of United Merchants & Manufacturers, this fiber-reactant resin is being used to produce spun-rayon shirtings that can be guaranteed to hold 2 to 3% shrinkage after 50 washings at 160°.

The dyed and dried cloth is run through an immersion box containing the resin, catalyst, and modifiers that may be needed to obtain a specific hand. Two or three dips in the mix precede a heavy squeeze in the pad; pickup is 60 to 70% of the resin mix.

The goods go directly into a Marshall & Williams overfeed device attached to a pin tenter. Frame temperatures run from 260 to 280° F., and speed is adjusted to suit the fabric. The goods are cured in a loop dryer at approximately 300° F. for 5 to 7 mins.

An afterwashing in the rope or open width is given the goods. In either case, tension is kept at a minimum. A synthetic detergent and sufficient mild alkali to counteract acidity are required in the afterwash.

The final drying is done on a looper. Most goods then go through the pin frame for final width adjustment and to smooth out the surface, but some goods are calendered on a light silk calender with two wool-paper bowls before pin-framing. Some types are finished directly off the pin frame.

Resin 13 also gives a satisfactory crushproofing effect. The over-all finish is smooth and supple and has good draping characteristics. Spun-rayon fabrics finished by this method are marketed under the Fortset label.

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IN PIGMENT DYEING AND PRINTING—

RHOPLEX AC-33*

RHOPLEX AC-33 is an acrylic resin emulsion which imparts excellent crock resistance when used as a binder for pigment dyeing and printing.

It also exhibits unusually high emulsion stability in storage and in application.

RHOPLEX AC-33 as a resin finish forms a crystal-like film which produces a firm, full hand of good durability.

* **RHOPLEX AC-33** *is another dependable chemical product for the textile industry made by the makers of* LYKOPON.

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THIS IS NO. 111 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

HOW TO WIND SOFT DYE TUBES OR CONES OF UNIFORM DENSITY

Some mills winding dye packages strive to wind soft dye tubes or cones; others are satisfied with harder packages as long as the package density is uniform throughout. Most mills, however, seek to obtain both conditions, a soft package of uniform density.

The pressure release attachment for the Roto-Coner* Winder helps to produce soft packages of uniform density by counterbalancing the weight of the package as it builds up. This permits the package to be wound under a minimum of pressure.

This attachment consists essentially of a round pressure weight (A fig. 1) that can be adjusted on the pressure release arm B. It can be used with either tubing or coning spindles. It can also be used with the high lift automatic sizing attachment, and coning spindles not equipped with a builder (the builder (F fig. 2) controls the increasing taper of the cone as it is wound).

As shown in figure 1 the arm is attached to the spindle holder bearing with the weighted end extending beyond the bearing's axis. Suspended in this fashion the weight acts as a lever counterbalancing the weight of the cone or tube holder.

The weight can be adjusted on the arm to increase or decrease the pressure and thus provides a means of getting different degrees of density. Moving the weight outward toward the end of the arm decreases the pressure; moving it inward has the opposite effect.

For tubing (and high or low lift coning applications not equipped with the latest snubbing device) a spring C, connector D and rocker arm E connect the pressure release attachment with the starting handle. This is done so that when the starting handle is pressed down to start the spindle it will overcome the counterbalancing effect of the pressure release attachment and lower the tube holder onto the traverse.

However, there should be no tension on the spring when the tube holder is in the running position.

When the attachment is used on a Roto-Coner Winder equipped with a builder as shown in Figure 2 it is placed on the opposite side of the spindle and a different type arm than that shown in Figure 1 is used.

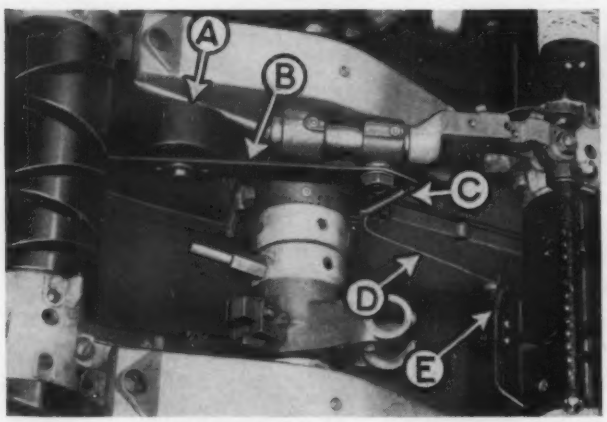


Fig. 1

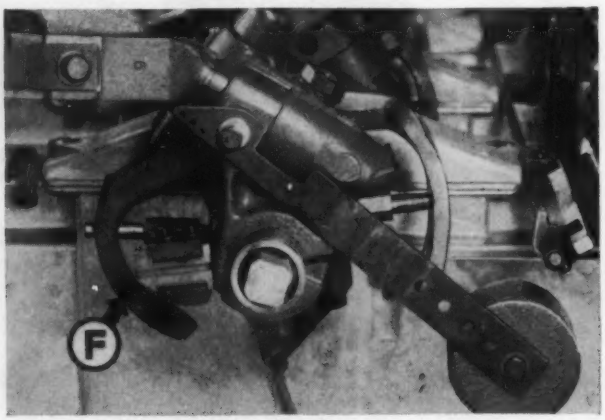


Fig. 2

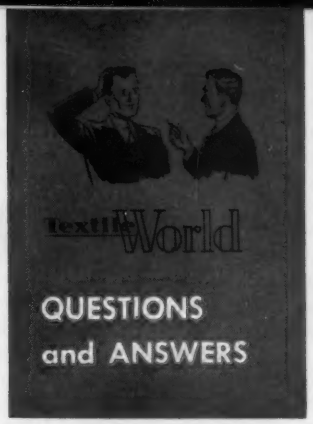
*Reg. U. S. Pat. Off.

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

UNIVERSAL WINDING COMPANY

LEESONA

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA LOS ANGELES MONTREAL and HAMILTON



TEXTILE WORLD's editors are at your service to help solve your problems in yarn manufacture, weaving, knitting, dyeing, finishing, or other textile operations. If you have a technical problem bothering you, send it along to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

Nep-Count Values Vary With Conditions

Technical Editor:

According to TEXTILE WORLD, Nov., '54, p. 100, early 1954 Texas cotton has grade and staple length about the same as early 1953 Texas cotton with better length uniformity, coarser fibers, and better maturity. However, neps are up considerably. How is it neps are up when maturity is better and fibers are coarser? (9880)

No one can explain what seems like inconsistencies in the behavior of cotton fiber. All cotton-fiber technologists are extremely careful to point out the fact that the six major elements of cotton-fiber quality usually measured (upper-half mean length, length-uniformity ratio, fiber fineness, fiber strength, percentage of mature fibers, and grade index) represent relationships as much as physical properties. Therefore, the physical measurement of any one of the elements is by no means a positive indication of its contribution to fiber behavior.

You are right in your thought that, in general, fiber coarseness and fiber maturity tend to lower neppiness. But other elements of quality, and particularly the interfiber relationships mentioned, enter the picture; in any given case, these other things may outweigh the contribution to nepping quality usually made by fiber coarseness and maturity.

A report issued by the U. S. Dept. of Agriculture in 1952 gave statistical analyses in which it correlated, among other things, contributions fiber-quality elements make to nepping. That report showed that the six elements of raw-cotton quality plus the carding rate—seven factors in all—accounted for only 70.2% of the variation in the number of neps in card web.

So it is easy to see that no one is able to judge accurately the nepping tendency of fiber by the two elements fiber fineness and fiber maturity.

However, you are probably more interested in nepping in the mill than neppiness indicated in the USDA tests. We might mention a few things about the general problem of nep counts. The figures on which the conclusions in the article about Texas cotton are based represent the neps obtained during the carding of four 5-lb. cotton samples. This amount is a small sampling. The USDA carding rate for this cotton is 9½ lbs. per hr.; so the sample represents a card running time of 30 mins. for each sample. Since neps increase with running time

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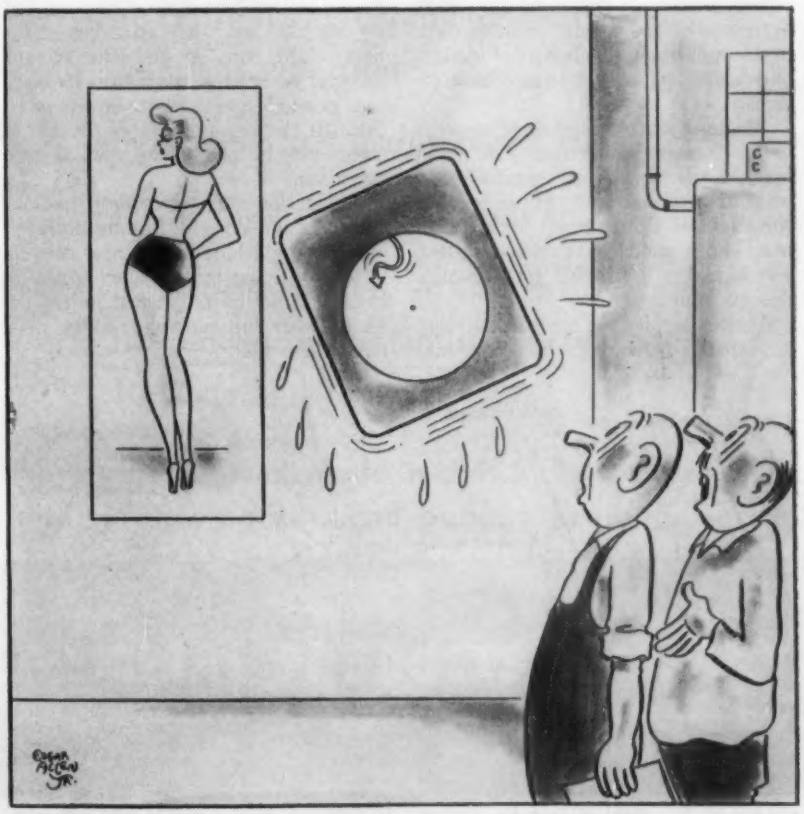
TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*



"I told you we shouldn't have hung that picture so close to the temperature recorder!"

during the 2½-hr. stripping cycle, which is standard practice in mills, there is insufficient carding time in the tests to obtain more than an indication of the neppiness of the cottons.

Also, nep counts will vary with the degree of sharpness of the carding wires. It is impractical to grind the card before processing each sample; so there is no assurance that the spinning-laboratory card was in exactly the same mechanical condition when the 1954 Deltapine cottons were processed as when the 1953 Deltapine cottons were processed.

These spinning tests offer reliable guides to the mill man, but this information must be interpreted properly; that is, only as guides. How much the 1954 Texas Deltapine cotton is worse than the 1953 crop so far as a mill is concerned will have to wait for real evaluation in the mills. The USDA men who handle these tests and reports would be the first to say so.

Print Knitted Fabrics With Screen or Machine

Technical Editor:

How are knitted fabrics printed? (9881)

Flat and tubular fabrics can be printed with continuous designs by either screen or machine methods. Screen work is suitable for short runs; rapid and frequent change of design; and heavy, over-all, or large blotch designs.

Machine work can be done by relief or by intaglio machines. The relief machine is somewhat similar to a printing press for paper; but because of the lack of dimensional stability of most knit goods it cannot register, which makes it suitable for one-color designs only.

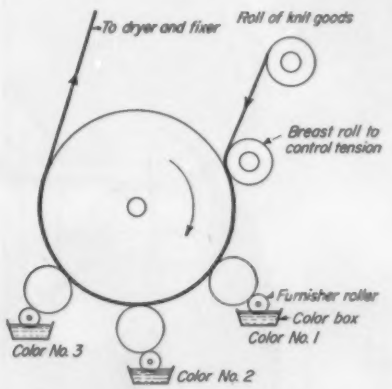
Multicolor designs are run on regular intaglio machines. The machines print with engraved copper rollers, chrome-plated to increase wear of rollers and give cleaner prints. The color is applied to the rollers from a brush roller or furnisher rotating in a color box containing the mixture of dye or pigment and suitable fixatives. After printing, the goods are dried and the color is fixed.

The simplest method is pigment printing, which uses colors of the Aridye or Sherdye type. These mixtures consist of easily mixed pigment-color bases and synthetic-resin fixers, which are mixed with solvents and water and emulsified in the solvent to give body to the color so it will stay in the engraved portions of the rollers. Fixation is by drying at about 240 to 300° F. in a tenter or curing oven. Loop dryers can also be used.

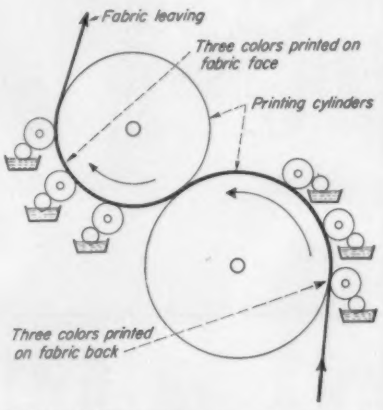
Some knit fabrics distort so easily that the necessary tension in machine printing gives trouble with poor fitting of multicolor designs. In such cases, the goods may be easily printed by first applying a temporary adhesive such as textile gum to stick the goods tight on the machine during printing and prevent distortion altogether. After passing through the machine, they are peeled off again automatically.

To print both sides of the fabric in one operation, duplex machines are used. These machines consist of two printing cylinders and two sets of engraved rollers. The cloth is first printed on one side, and then it makes half a figure-eight turn around the second cylinder when it is turned on its back and printed again, all in one passage through the equipment. Up to three colors may be printed on each side at one time.

Production varies according to type of fabric and design. Simple patterns on fairly rigid knit fabrics may run up to 120 yds. per min., others from 20 to 60 yds. per min. Normal rollers are 48 ins. wide, but extra-wide rollers may be used for tricot.



INTAGLIO MACHINE is used for printing multicolor designs on knit fabrics. The color is applied to the rollers from a furnisher roller.



DUPLEX MACHINE is used to print both sides of the fabric at once. Two printing cylinders are used.

Relative Humidities For Weaving Fabrics

Technical Editor:

What are suitable humidity conditions to weave 20s acetate and rayon, 40s cotton, filament acetate, viscose, nylon, Bemberg, Dacron, and Orlon? (9895)

These relative humidities are run in Southern mills for the best production:

20s spun acetate and rayon	78% (r.h.)
40s cotton	80%
Filament acetate and rayon	65%
Bemberg	68 to 70%
Nylon, Dacron, Orlon	65 to 70%

Billiard Cloth Requires Four or Five Operations

Technical Editor:

What operations are involved in finishing billiard cloth? (9885)

These operations are used to finish billiard cloth:

1. Medium-heavy fulling
2. Brushing
3. Medium-close shearing.
4. Slight napping and shearing
5. Full decating

The slight napping and shearing is optional.

Look After Your Take-Up-Roll Covers

Technical Editor:

Do take-up-roll covers make set marks in cloth? (9883)

The condition of take-up-roll covers and press-roll covers at the loom is important in the prevention of set marks in woven fabrics. The covers should be checked often to see that they're in good condition.

If take-up rolls are blistered or if the glue is loose, replace the covers or rolls immediately. Check the press rolls by finger-tip checks for density; if the roll surface is hard, replace the rolls.

Make visual checks also to see that the cloth is pulling down evenly all the way across; there should be no sagging at the temples. Slick rolls let the cloth sag and beat back too much. Excessive and extremely bad set marks result.

If the take-up-roll or press-roll cover is worn, the cloth fails to take up for a short time when the loom is restarted after a stop; and set marks are made.

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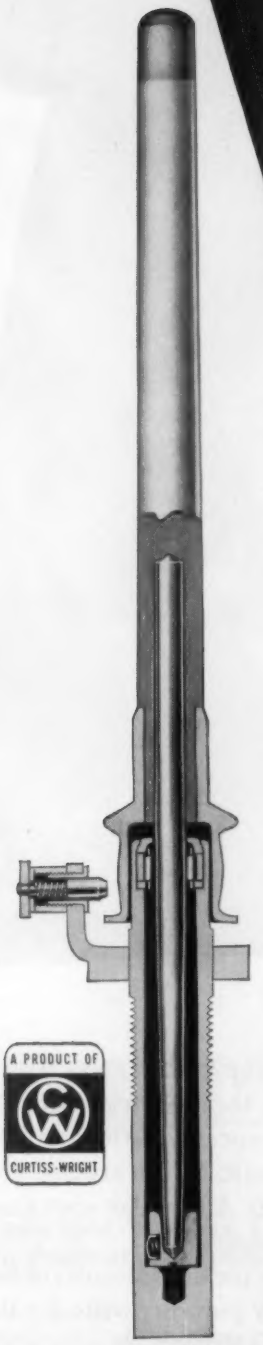

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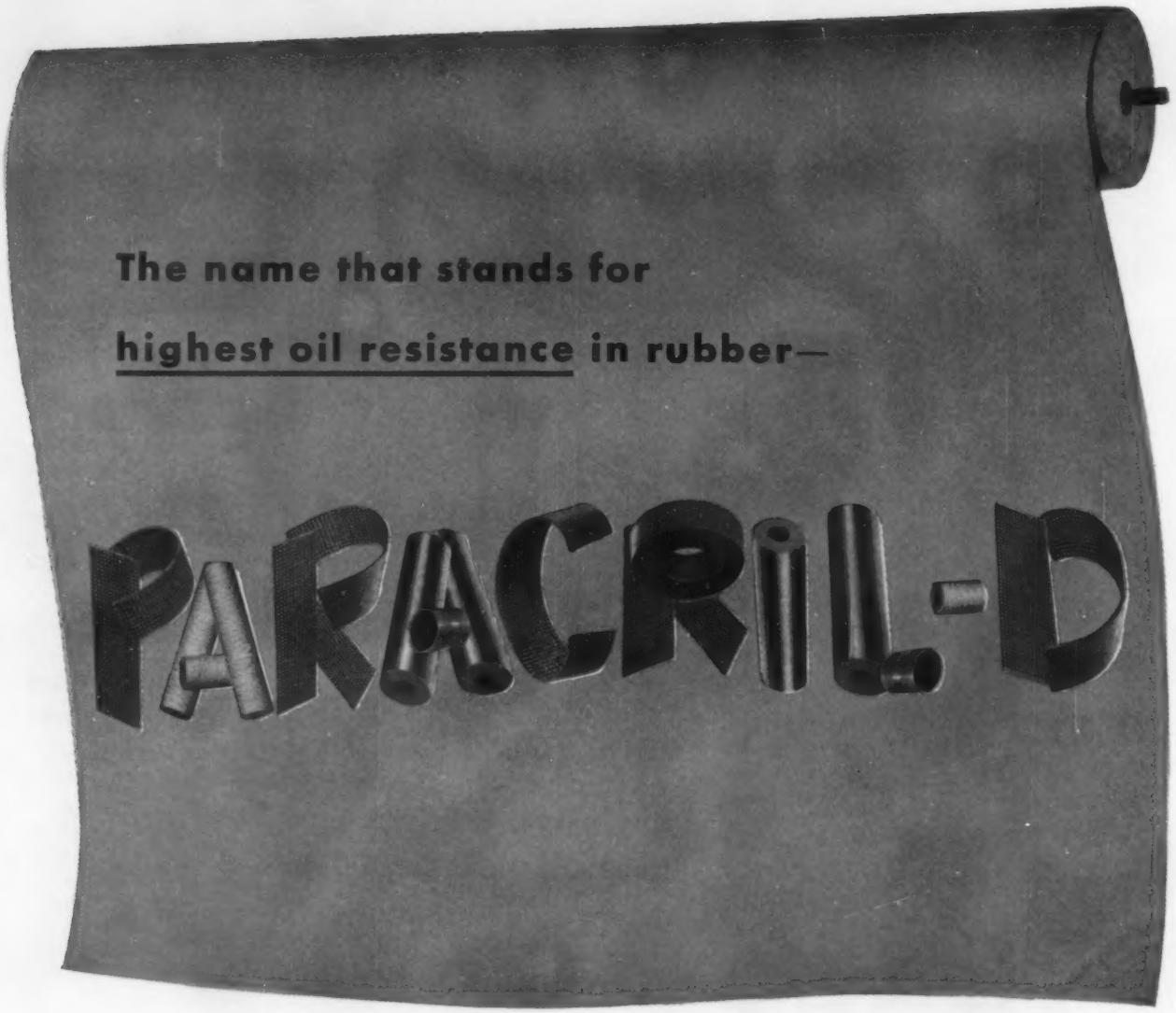

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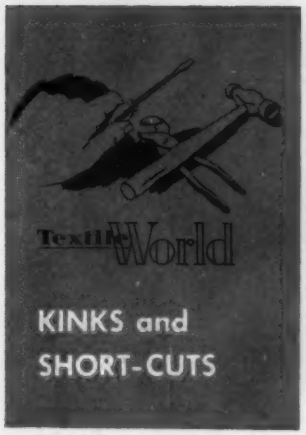
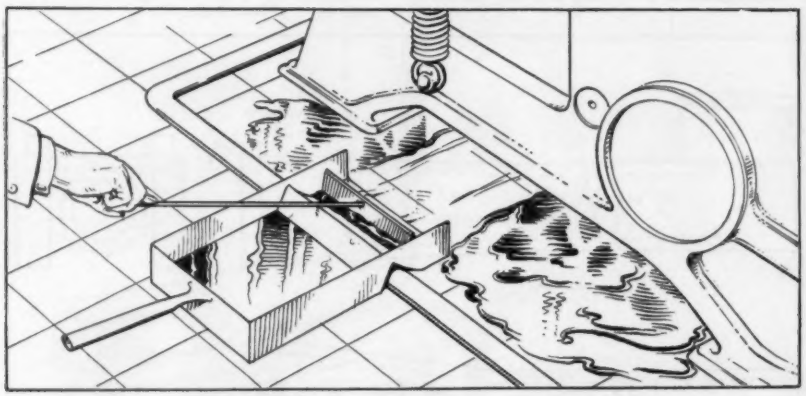
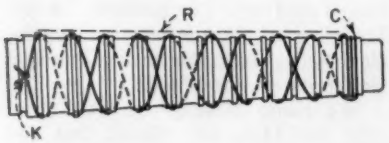




Shovel Picks Up Oil

A two-compartment shovel that we designed enables us to pick up the oil that collects on the floor pans under machines. A rubber squeegee pulls the oil onto the shovel over one end that is flush with the floor. The squeegee then goes over a hump that separates the compartments, and the oil is trapped in the closed-in section. *Ets. Louis Nicot, Troyes, France*



Resurface Wooden Cones To Prevent Slough-Off

In the magazine creel of a high-speed warping machine, the yarn should continue to deliver from the full cone when the adjacent cone is exhausted. But in practice, a break often occurs at the change-over or a small bunch of yarn goes through the reeds into the running beams.

We solved the trouble by covering our wooden cones with a $\frac{1}{8}$-in. layer of 18/3 dark-blue dyed yarn. The yarn remains permanently on the bare cone and is protected by a thin coat of gelatin. The tail ends are tied into a knot that is embedded inside the layers to avoid puckering, as shown at *K* in the accompanying sketch. The method by which coils are put on by hand at the nose of the cone is shown at *C*. The yarn surface is at *R*.

This is a cheap and effective method of making wooden cones resilient so that they offer a good starting contact with the ebonite traverse on the winder. The positive surface affords resistance necessary to avoid slough-off at the magazine creel if, for economic reasons, it is not possible to use cork- or rubber-covered cones.

Experience has shown that the life of the wooden cone is lengthened. Also, there is no risk of accumulating half-full cones for rewinding.

The resurfaced cone produces a noticeable reduction in the number of breakages and an increase in production at the warper. Faults such as entangled or cross ends in the warp beam are greatly reduced. *V. V. Rajwade, India.*

Hosiery Fixer's Stool Makes Work Easier

We provide a low metal stool for each knitting alley in our mill. The stool is very light, and it runs on casters.

The stool is used by the fixer when he makes size changes on the pattern chain and when he works on lower parts of the machine.

The stool makes this work easier for the fixer and allows the knitter to move about the alley with greater ease. When the stool is not in use, it takes up little space between two knitting machines.

Prevent Static in Belts

Belting material that is a good conductor does not generate static electricity. Therefore, metallize a leather belt by stitching copper wire in it from end to end. The wire will eliminate the build-up of static and the belt does not require grounding. *W. F. Schaphorst, Newark, N. J.*

This Loom Bumper Stops Broken Picker Sticks

We were having a lot of broken picker sticks on our X-2 looms. This breakage was causing our loomfixers extra work, and the supply costs for each loomfixer were high. The picker sticks broke where the stick struck the picker-stick bumper in the lay end.

To eliminate this stick breakage, we now use a synthetic-rubber pick-shaft bumper to replace the old picker-stick bumper. The pick-shaft bumper is 2 ins. long, 1½ ins. wide, and ⅜ in. thick. We cut off ¼ in. of the bumper and bevel one side so that the picker-stick guide fits snugly around the bumper. Then we cut a piece of old slotted leather checkstrap 5 ins. long and wrap it around the rubber bumper. Next we drive a six-penny nail through the checkstrap and bumper and brad the point of the nail.

We trim the leather to fit the rubber and place the bumpers in the regular position on the loom. The rubber is flexible enough to cushion the picker stick and protect it. The checkstrap makes the bumper wear longer.

We have been running some of these bumpers for several months and haven't had a broken picker stick where the bumpers are used. These looms have less downtime, production is higher, and supply costs are reduced. *Eugene Rinehart, Trion, Ga.*

Best-Kink Award for May

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

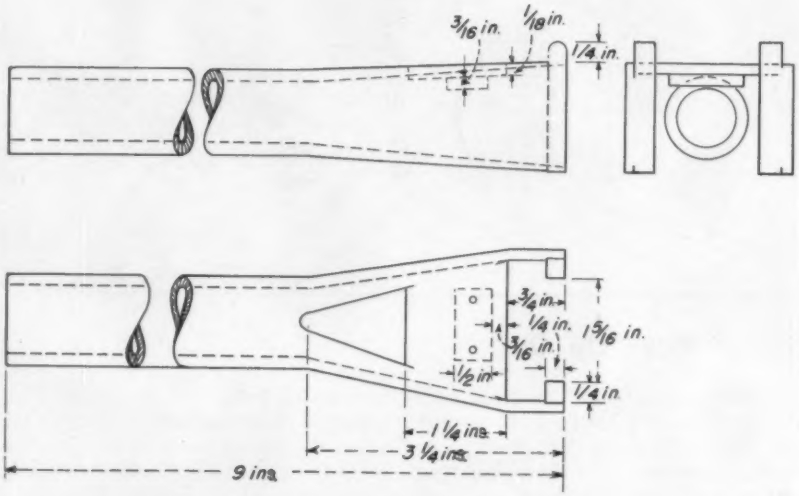
If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for May, according to TEXTILE WORLD reader-judges, was:

"Foam Rubber Prevents Creases In Cloth"

By Leo A. Bouvier, Pawtucket, R. I.

Mr. Bouvier is being sent a check for $25 with the compliments of TEXTILE WORLD.



Metal Bobbin Lifter Is Durable

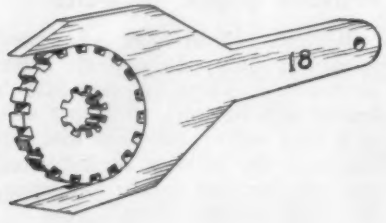
Some types of bobbin lifters do not work well on spindles where it is necessary to hold down the spindle while lifting the bobbin.

We designed a bobbin lifter especially for tapered spindles where the height of the bobbin is dependent upon the size of the hole in the base.

When the bobbin sets close to the whorl, the first step on the lifter rests on top of the whorl and the forked end lifts the bobbin. If the bobbin rests higher on the spindle, the lifter is pushed in until the second step rests on the whorl.

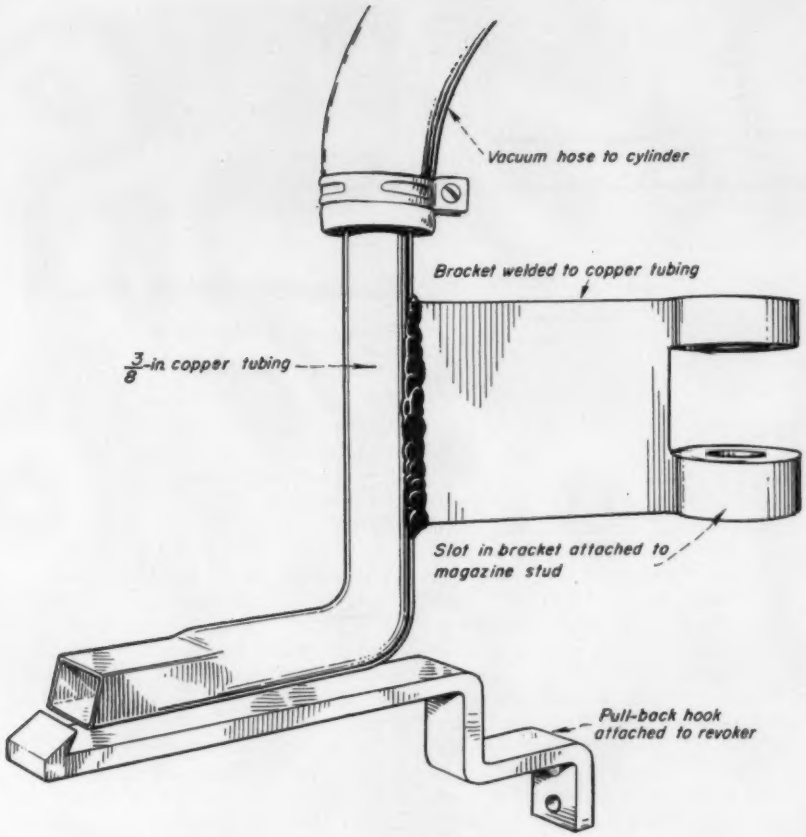
We made these lifters from ¾-in. pipe for 1½-in.-dia. whorls, but the size can be varied to suit other requirements. While these metal lifters break occasionally, they outlast wood and fibre lifters. *Cecil H. Smith, Galt, Ont.*

Wooden Gauge Is Used To Find Change-Gear Size



It is often necessary to check the change gears on worm-gear and spur-gear take-ups to be sure the gears are putting the right number of picks per inch in cloth as it's woven on the loom. Counting the teeth in the gear or checking the stenciled number is a tedious job, especially if several looms have to be checked.

To make this job easy, we have made gauges to check the gears. One gauge is made for each change gear of a given number. The gauges are made from hardwood in our mill carpenter shop. They have to be made very accurately to gauge the gears exactly. Each gauge has the number of the gear it is to fit stenciled on the handle. *Wilmer C. Westbrook, Trion, Ga.*


Vacuum hose to cylinder
Bracket welded to copper tubing
3/8-in copper tubing
Slot in bracket attached to magazine stud
Pull-back hook attached to revoker

Homemade Vacuum Control Stops Jerk-Backs

We used to have a lot of jerked-in filling at the bobbin transfer on our C&K S-6 looms. No matter how close we set the suction-tube assembly on the vacuum control, jerk-backs were sometimes made.

We have eliminated 95% of the jerk-backs by removing the original suction-tube assembly and replacing it with a new motion we designed ourselves.

First, we removed the assembly and placed a length of $\frac{3}{8}$-in. copper tubing in the $\frac{3}{8}$-in. rubber tube leading to the vacuum cylinder. The copper tubing is bent at a right angle about 2 ins. from the open end. The open end is flattened to a $\frac{1}{4}$x$\frac{3}{8}$-in. rectangular shape. The $\frac{3}{8}$-in. surface is parallel to the loom lay.

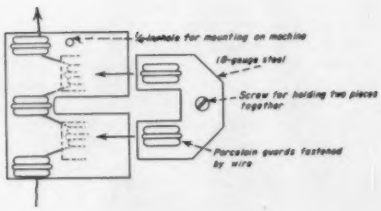
A bracket is welded to the copper tubing near the center, and the bracket is attached to the eccentric-roll stud on the magazine.

A hook is made from $\frac{1}{8}$-in. strap iron and is bent to the shape shown in the sketch. Two holes are bored in the blunt end of the hook. This end of the hook is screwed to the magazine revoker arm where the cam is attached.

With this setup, the homemade hook moves with the revoker so that the filling from the transferred filling bobbin is positively picked up. The eccentric-hole stud on the magazine moves the end of the copper tubing along with the hook.

Since the hook holds the picked-up filling at the opening in the copper tubing, the end of filling is pulled into the vacuum cylinder each time the filling transfer is completed.

The cost of the parts is small because we make them in our mill machine shop. Cloth quality is now higher, and we have fewer loom shutdowns because loomfixers work on the suction-tube assembly less often. *Charles R. Batzer, Lancaster, Pa.*


¼-in. hole for mounting on machine
18-gauge steel
Screw for holding two pieces together
Porcelain guards fastened by wire

Yarn-Tension Device Solves Knitting Problem

We had trouble with loops when we knitted double-plush fabric on our Tompkins spring-needle machines. The trouble was due to the lack of tension on our 30s cotton yarn.

I made a tension device from two pieces of 18-gauge steel strip. A slot is cut in the center of the larger piece to receive a screw that holds the two pieces together.

Two porcelains are fixed to the smaller piece, and three porcelains are fixed to the larger piece. Two small holes drilled in the metal receive a wire to hold the porcelains. A $\frac{1}{4}$-in. hole is drilled in the large piece for a screw that is used to fasten the device to the machine table below the burr bracket. A hole in the center of the smaller piece is drilled for the adjusting screw.

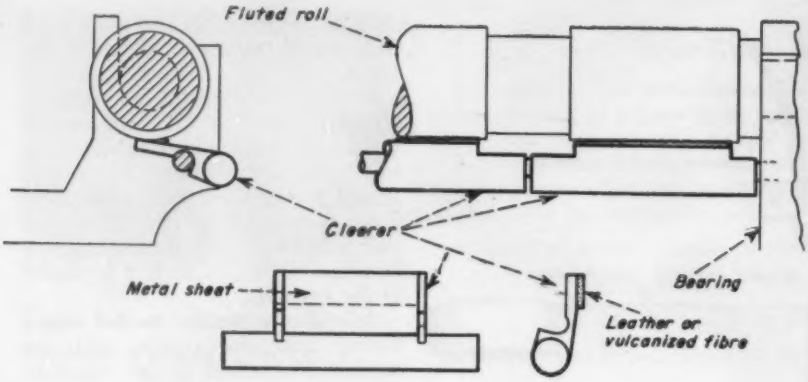
The pieces are fixed together, and the yarn is threaded through all five porcelains. The small piece is adjusted while the machine is running until sufficient tension is placed on the yarn to stop the loops. *Roy Cole, Galt, Ont.*

How To Lubricate Rubbing Wood Surfaces

Here's an effective method for lubricating rubbing wood surfaces whether they are wood-to-wood or wood-to-metal.

Melt some paraffin, add an equal quantity of powdered graphite, and stir well. Allow the mixture to set. When lubricant is required, remove some of the mixture, melt the portion, and rub it into the wood for a lasting lubricant.

The mixture can also be used on metal screws and parts embedded in wood to prevent rusting. *W. E. Warner, Essex, England.*



Improved Clearer for Roving Frames

Neither revolving clearers nor the stationary type for roving frames were satisfactory in our mill. It was hard to remove the revolving clearer without damaging the roving, and lint from the stationary type had a tendency to get between the first and second rolls.

I have developed a clearer, as illustrated, that prevents lint from sticking to the clearer or getting into the work.

The clearer is constructed from a $\frac{5}{16}$-in. bar to which is fastened a piece of sheet metal shaped as shown. A strip of leather or vulcanized fibre is glued across the top edge of the metal lip.

To operate, the edge of the metal strip is shoved up under the front roll. The device is shaped so that it cannot change position once the ends of the rod are fitted into holes drilled into the supports. The clearer can be removed easily, even when the frame is in operation.

When a small bundle of waste forms, it drops onto the roller beam and can be removed easily by the operator.

The clearer is suitable for use on long-draft roving frames running either cotton or staple fiber. *S. F. Lluch, Barcelona, Spain*

Prepare Strip-Test Samples Rapidly

If you make extensive use of the standard ASTM 1-in. strip test for fabric tensile strength, the clamping device pictured will greatly speed up the operation.

Suitable templates are used to cut $1\frac{3}{8}$-in. and $1\frac{1}{4}$-in. widths of fabric in accordance with ASTM procedure. These samples are placed on the platform of the clamp, and the lever (arrow) is pulled forward to insert two needles into the sample and to lock the sample rigidly in place. The needles are 1 in. apart.

With both hands free, the technicians ravels down all ends from both edges beyond the needles. A pick is helpful in unraveling tightly woven fabrics. *Edward S. Rudnick, New Bedford, Mass.*

$500 for Best Kink in 1955

$25 for Best Kink Each Month

In Addition to Space Payment on Acceptance

Send in your Kink now. There is always a contest going on.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it; we will pay you extra if you do and we can use it.

We like ideas for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1955.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

More Kinks on page 151

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The new Pneumafil Economizer System

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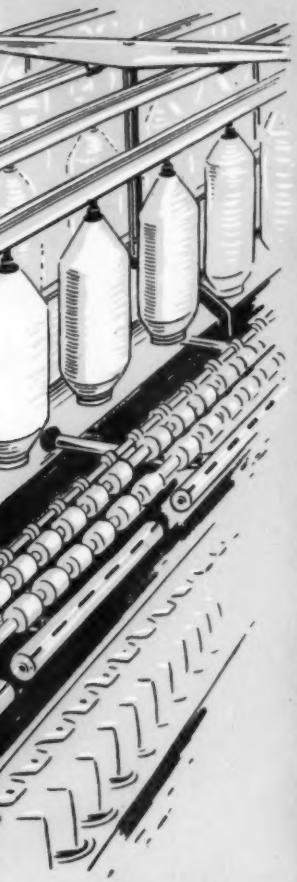
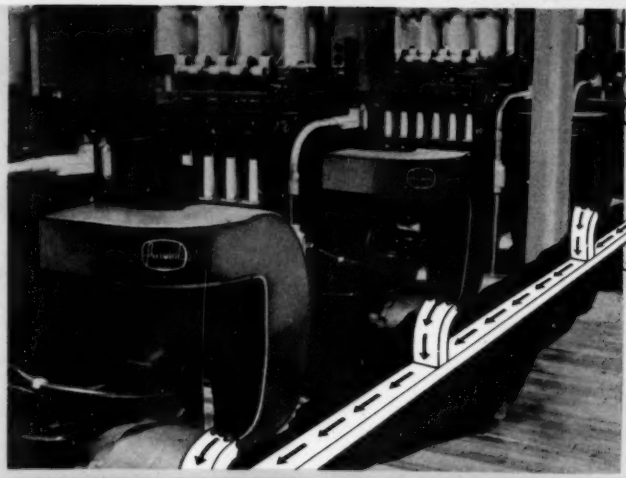
spinning more and better yarn

amazing as the original idea



Shown above is the new Pneumafil LINT-FREE CREEL



CENTRAL MATERIAL RECOVERY Material recovery from a group of frames—automatically conveyed to picker hopper, or to any point in mill—also with uniform distribution of conditioned air.

CENTRAL AIR HANDLING Individual frame material recovery served by a centrally located motor and fan . . . provides uniform distribution of conditioned air and a reduction of room heat load.

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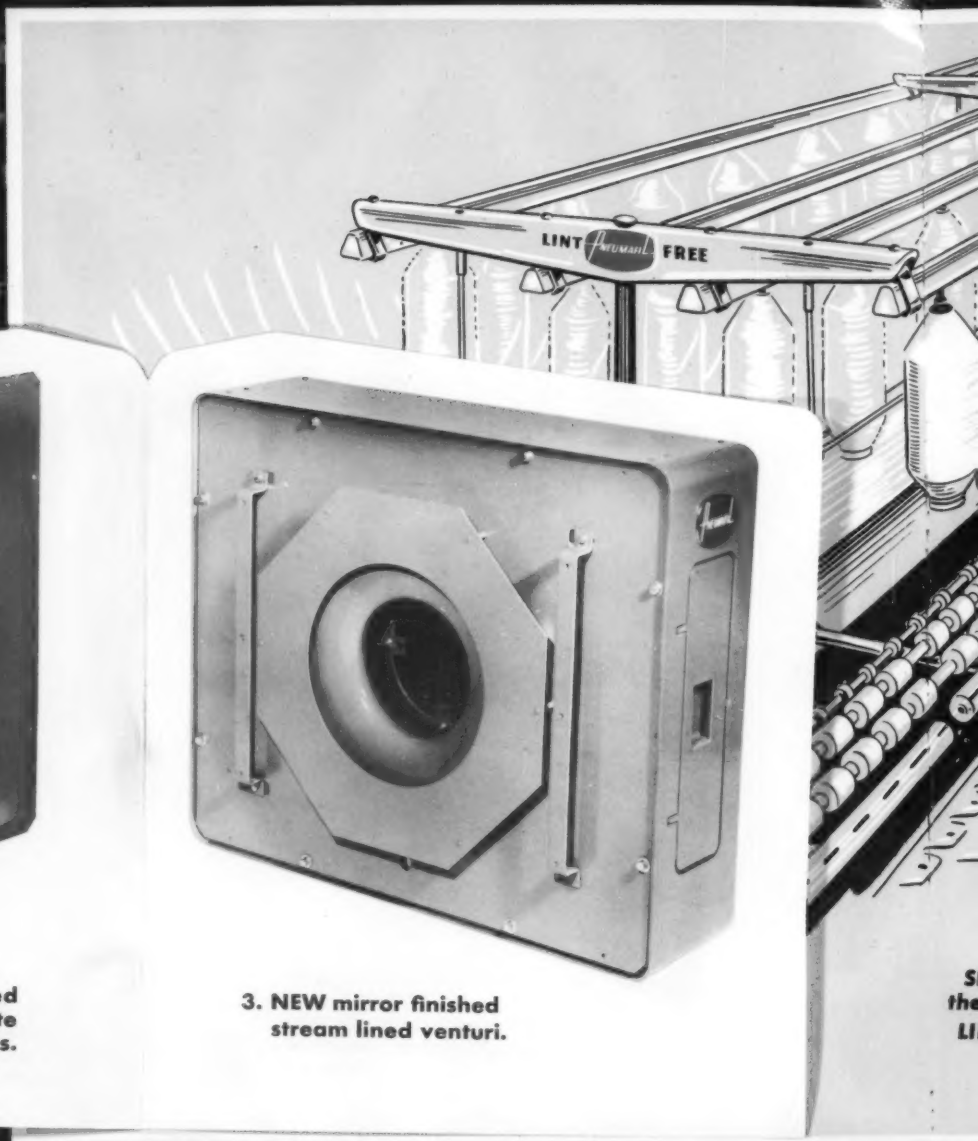

2. Diametrically balanced turbo-fan with involute design rotor blades.

3. NEW mirror finished stream lined venturi.

The new Pneumafil Economizer System

TODAY, 18 months ahead of schedule and fully tested, this new Pneumafil Economizer System is ready for your mill, giving you the most modern, best engineered material recovery system in the world.

On the new Pneumafil Economizer System, you will find these outstanding features:

Increased air volume for maximum removal of lint and fly—with less horsepower.

New Pneumafil Economizer System has 50% greater collection capacity with no loss in pressure efficiency.

The new light weight aluminum double access vacuum sealed baked-on enamel finish inside and of machinery.

Newly designed machined aluminu rotor blades is self-cleaning.

Air is gently released in all directi cially designed vents . . . there are

Completely versatile . . . interchang Central Air Type — Central Air matter of minutes.

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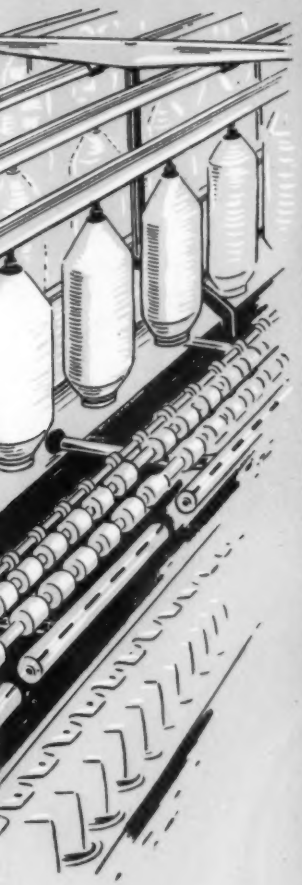

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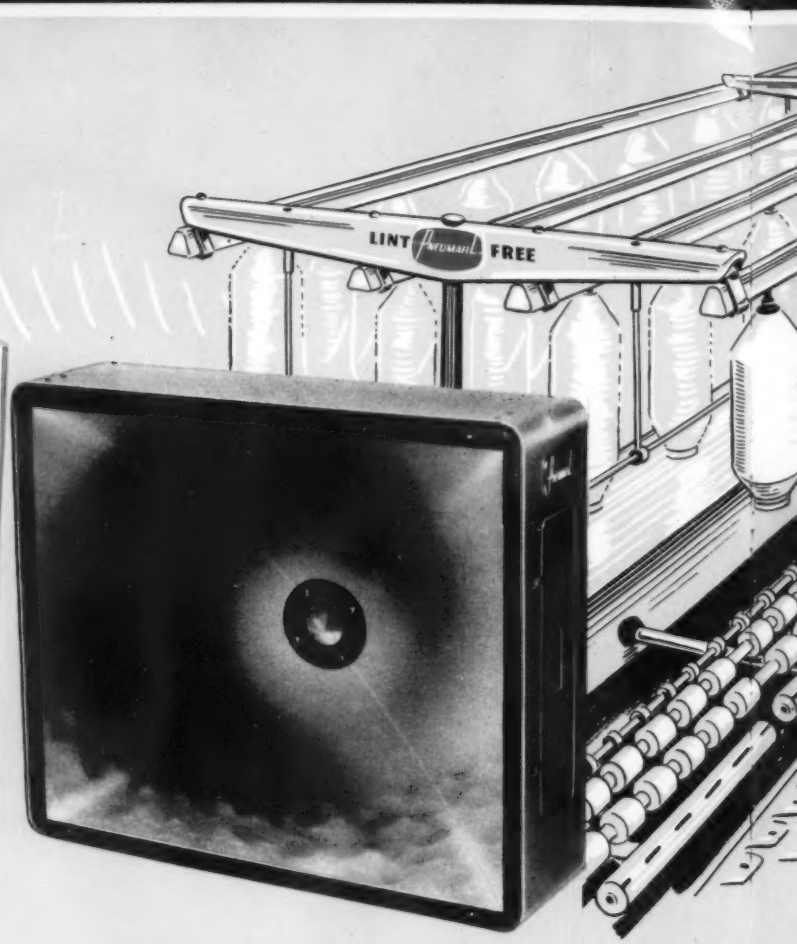
4. New special design air-cooled venturi mounted motor.



5. New increased capacity material recovery unit with fine mesh screen.

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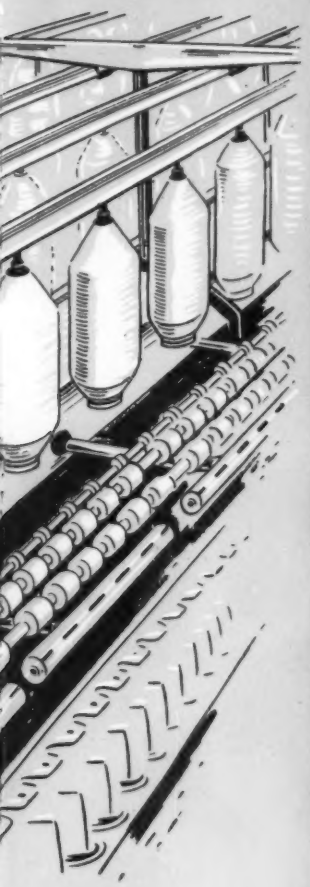

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C. R. HARRIS, *President*

You will want the complete story of the new Pneumafil Economizer System to see how it fits in your mill planning— There is no obligation—just send your name and address to:

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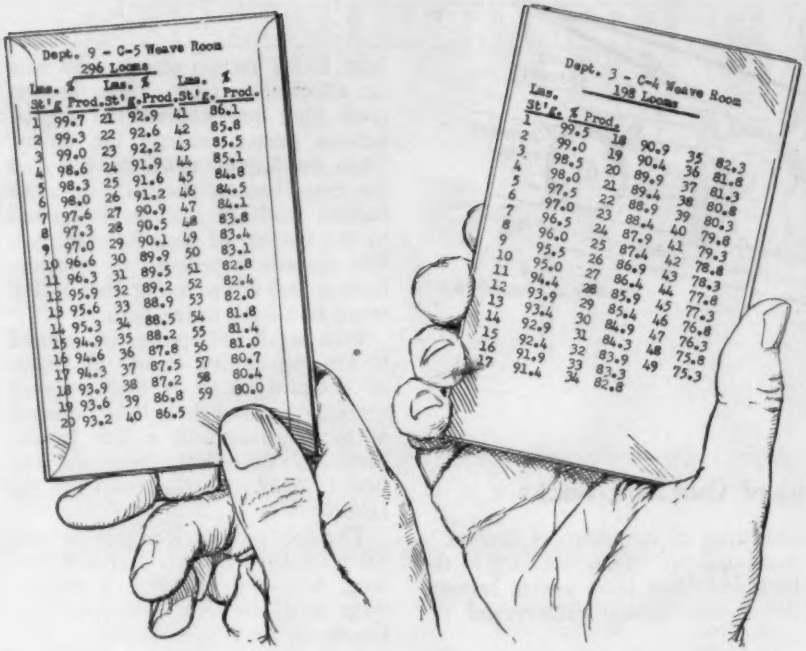


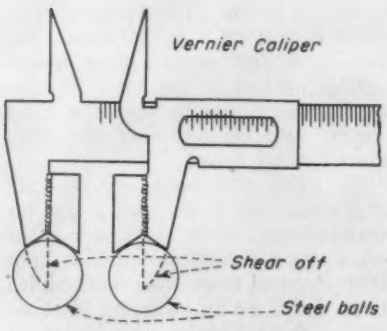
Card Shows Hourly Weave-Room Production

To keep our weave-room production high, we require our second hands to count the stopped looms on their jobs once each hour. At the time they check the stopped looms, they're also required to figure the actual production they're running at the time.

Each second hand used to figure the production by dividing the total number of looms on his job into the number of stopped looms and subtracting the resulting number from 100%. The resulting figure was the second hand's actual production at the time.

Now we give each second hand a pocket-size card covered by a cellophane envelope that shows him the production he's running at a quick glance. The card gives the total number of looms and shows what production is being run when from 1 to 49 looms are stopped.

Now second hands don't waste time figuring production but immediately start to do something to get the stopped looms running again.

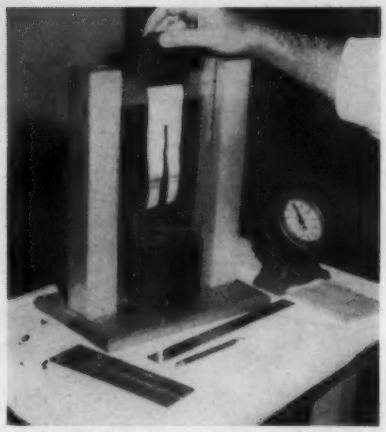


Rebuilt Caliper Measures Roll Spread

Our old method of finding the center-to-center distance or spread between two drafting rolls was to lay a narrow strip of firmly stretched paper across two adjacent rolls. Then, with the aid of a rule, the paper was pressed on the rolls until a legible impression was left on the paper by the roll flutes.

By measuring the distance between the impression, we obtained the center-to-center spread. We did this each time we wanted to learn the adjustment of a certain frame or to apply another adjustment.

The job was a tedious one; so we built a special tool from an old but still-accurate vernier, as shown in the sketch. Now, we obtain, apply, and check measurments easily and accurately in a very short time. *Gil E. Mora, Manila*



How To Test For Absorbency

A simple method of performing the Weireck absorbency test for measuring the distance that water climbs a 1-in. strip of fabric within a given length of time is as follows:

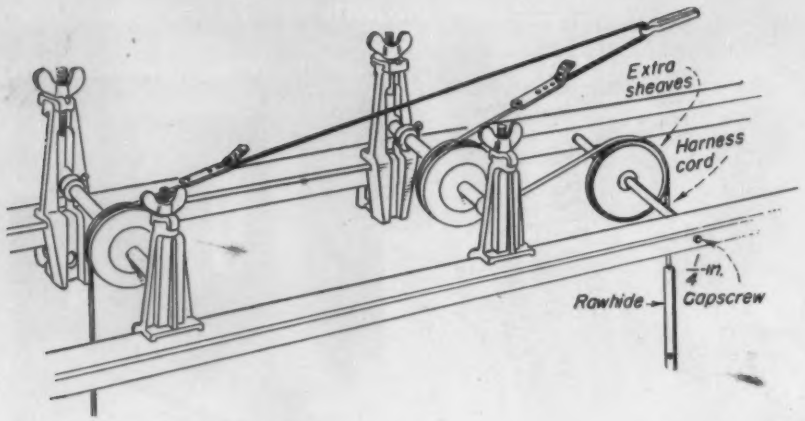
After preparing the specimens with a suitable template, the sample is clipped to the top edge of a cross-piece made of Lucite or other smooth material. A beaker filled to the etched level with stained water is placed beneath the sample.

The cross piece is then dropped into the slots in the frame, and the timer is started simultaneously. Exactly 1 in. of the sample is instantaneously immersed in the liquid.

To measure the wick (capillary) action, a block of wood is held against the side of the beaker by means of a spring arrangement. The top surface of the block at water level forms a rest for a measuring rule that is placed against the side of the beaker. The wick-up distance can be easily and quickly read by sighting across the gradations of the rule to the top of the stain. A straight-edged beaker prevents optical distortion. *Edward S. Rudnick, New Bedford, Mass.*

Cord Secures Paintbrush

To prevent a paintbrush falling more than a few feet if the brush accidentally slips from the painter's hand, attach a nylon cord from the safety belt to the paintbrush handle. *Gadgets*



An Extra Harness Sheave Stopped Our Jerk-Backs

We have always had second-grade cloth that was caused by jerked-in filling on 4x1 dobby looms. We tried several devices to eliminate jerk-backs, but everything we tried gave a lot of trouble on the loom and required too much attention from the loomfixer to keep it operating.

We have recently developed an attachment to stop jerk-backs that requires little attention after it is put on the loom and adjusted.

An extra harness-sheave assembly consisting of four harness sheaves, a shaft, and two collars is bolted to the back and front loom arches between the regular harness sheaves and the dobby.

Two ⅜-in. holes are drilled in the ends of the shaft, and these holes are tapped for ¼-in. capscrews. A ¼-in. hole is drilled in the front and back arches of the loom. Capscrews of ¼-in. dia. are used to hold the shaft to the arches.

Four jack-eyes on the back dobby jacks and a portion of a harness wire are attached to each of four harness cords that run around the regular harness sheaves nearest the dobby. Then the harness cords are run over the extra harness sheaves. A mock harness made of rawhide is hooked to the bottom of each harness cord. The rawhide is fastened to a regular harness pull-down spring that is fastened to a hook in the floor.

Four small coil springs are secured to the stop-motion stand. A length of jacquard twine is tied to each spring, run through a hole punched in the rawhide with a belt punch, passed just outside the harnesses, and tied to hooks in the front of the breastbeam.

The dobby chain is pegged to raise one cord when the top shuttle is running, two cords for No. 2 shuttle, three cords for No. 3 shuttle, and four cords for No. 4 shuttle.

A small groove is cut in the race plate to recess the cords and prevent their being worn by the shuttle.

We check the cords occasionally for wear. No other attention is given to this attachment that has completely stopped our jerked-in filling. *Bernard Dixon, Danville, Va.*

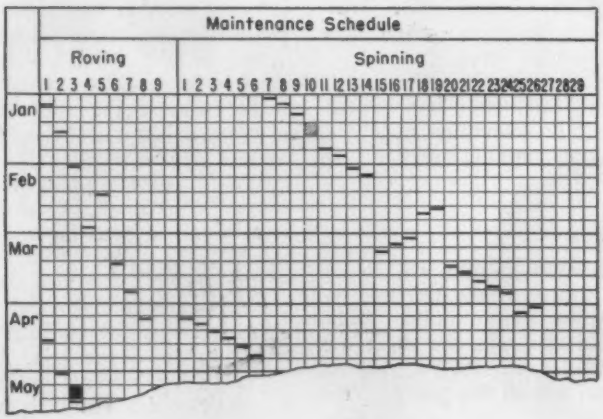


Chart Illustrates Maintenance Progress

We use a simple and inexpensive form for keeping machine maintenance records: a sheet of 5x5 graph paper mounted on a plywood board and hung on a wall.

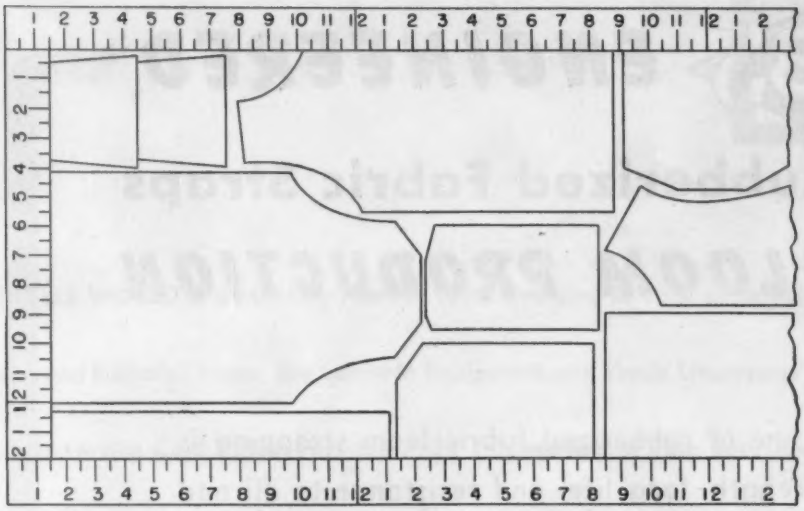
To set up the form, divide the graph paper into columns representing 12 months. Divide the space for each month into five major divisions, and let each of these divisions signify one week. Then, let the five minor divisions that comprise the week signify days from Monday through Friday. From left to right, write the numbers of each machine by department.

A line drawn in the first-day space means that on Monday of that week, a day of maintenance work was spent on a particular machine. A week of work on a machine, for example, is symbolized by filling in the entire 5x5 square. Different types of work are symbolized by different colors: blue means scouring, black means overhauling, red means a new installation, and green stands for special jobs.

The maintenance record for all the machines in our 21,000-spindle operation is kept on a 3x3-ft. form. For any detail that requires more investigation, we look in our files. It takes us 3 mins. a day to keep the chart up to date by recording the work done the day before.

By using this form, we can tell at a glance which machine is due for maintenance, when work was done on a specific machine, which jobs have required more than a scheduled time, and if we are following the time set by the schedule for a group of machines.

It is easy to plan production because we can make allowances for machines that we know will be out of production. *Hans-W. Cohn, Kfar Ata, Israel*



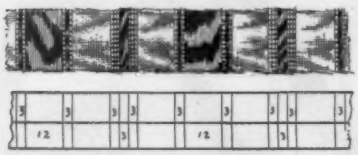
Planning Cloth Lays Saves 2% Material Costs

A new system of laying out patterns on our cloth has saved us 1 to 2% of our material costs.

We use small-scale plastic models of our cutting patterns. The lays are planned to give the least waste on a scale representation of the material to be cut, as illustrated.

The layout is then photographed with a rapid-picture camera. Check points are provided by graduated scales on the laying-out board so that the record can be used for marking in.

The reduction in size of the models is five to one, which enables us to visualize the whole lay at a glance. *Target*



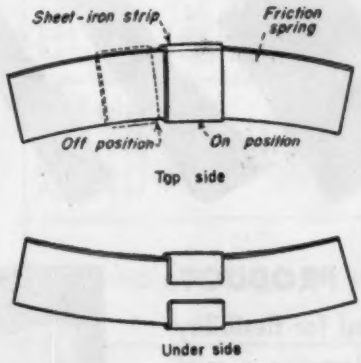
Use a Sketch To Check Warp Stripes in Cloth

We used to make a number of errors in our cloth construction when we made beams for fancy warp-striped cloth.

We are now able to prevent many of these errors by giving a sketch to the warper operator showing the exact width of the stripe, the number of ends used in the stripe, the color of the ends, the width of the ground part, the number of ends in the ground part, the reed count of the cloth, the total number of ends in the cloth, and the width of the cloth.

The warper operator compares the width of the stripe on the warp with the width of the stripe shown on the sketch.

If more than one beam is used, a sketch should be made for each beam. The sketch may also be used when the warp is in the harness.

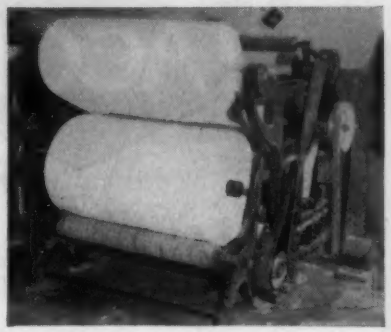


Strap Gives More Pressure On Full-Fashioned Friction

We needed more pressure from the friction springs on our full-fashioned hosiery machines; so we took a piece of sheet iron about 1¼ ins. wide and 2¼ ins. long and bent it around the middle of the spring.

The straps can easily be shifted on and off when friction is used for two different carrier sets, if one set needs a light pressure.

We get better performance, increased production, and fewer shutdowns by using this gadget. *R. P. Singer, Brooksville, Fla.*



Inspecting Machines Conserve Floor Space

To conserve floor space in our cloth room, we have modified our cloth-inspecting machines so that two rolls of cloth are arranged in the space formerly occupied by one. This machine modification has made it possible to inspect cloth woven on new X-2 looms added to our original looms without expanding the cloth-room building.

A monorail runs over the back of all inspecting machines. An electric hoist on the monorail is used to lift a large roll of cloth to the top rack of each machine. Cloth is doffed at the loom in approximately 100-yd. lengths; and several of these rolls are stitched together to form the large rolls, up to 1,000 yds. long, that are inspected.

The end of the roll of cloth to be inspected is threaded over the machine and down the front for inspection; and then it's rolled up directly under the original roll. The clearance between the two rolls is only 3 ins.; and since the cloth winds off the first roll as it is wound onto the second roll, the 3-in. clearance is always held. Consequently, little space is needed for the cloth.

After the cloth is inspected, the hoist is used to remove the roll and put up a new roll. In addition to other work, one man easily handles all cloth before and after inspection. *Moultrie Cotton Mills, Moultrie, Ga.*

Keep Bolts From Freezing

You can keep bolts in high-temperature areas from becoming heat-frozen. Just brush milk of magnesia onto the threads before the bolt is inserted. The bolt will be easy to turn, even after extended use in a furnace. *Factory*

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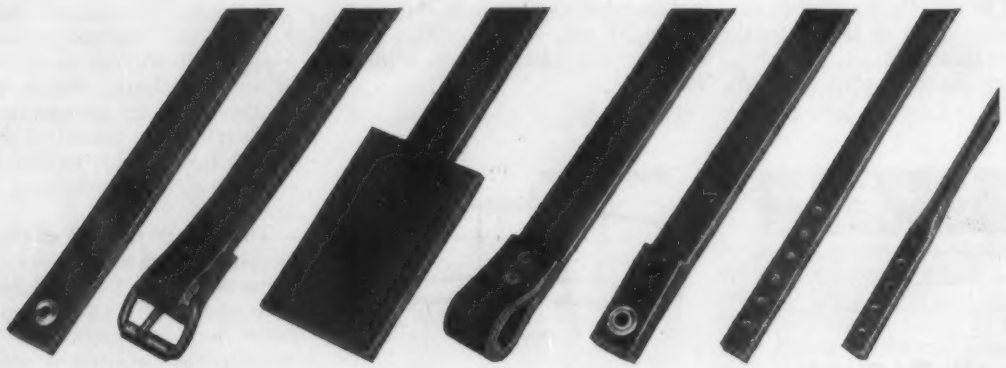

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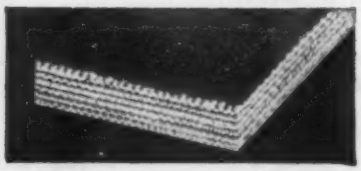

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A-23	A-24	A-25	A-26	A-27	A-28	A-29	A-30	A-31	A-32	A-33
A-34	A-35	A-36	A-37	A-38	A-39	A-40	A-41	A-42	A-43	A-44
A-45	A-46	A-47	A-48	A-49	A-50	A-51	A-52	A-53	A-54	A-55

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. July, 1955

Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for July are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

Card sets—With high output. Drive by longitudinal shaft. Infinite speed variation. Increased carding surface. Spinnbau GmbH. (F-1)

Rubber-covering machines—48- and 80-end. Ball-bearing spindles. 10,000 rpm. for fine or heavy yarns. Automatic stretch control. No. 13. H. H. Arnold Co., Inc. (F-2)

Cone winder—For cotton, wool, worsted. Winding length 5⅞ ins. Bobbin weight 4½ lbs. Automatic stop motion. American Schweiter Co. (F-3)

Roto drafter—For American system. Converted to drawing frame in 30 mins. Four-delivery machine. Processes fibers from 1¾ to 9 ins. Whitin Machine Works. (F-4)

Take-up machines—For precision winding at constant speed to spools or tubes. Packages up to 15-in. dia. 10-in. traverse. 200 yds. per min. Universal Winding Co. (F-5)

Staple cutter—Cuts rove, sliver, or filament yarn into uniform lengths. Varispeed motor on feed permits instant staple-length changes. No. 209. Taylor-Stiles (F-6)

Quilting stitching machines—With high-speed automatic multineedle lock stitch. Stitching width up to 98 ins. 600 stitches per min. 90 yds. per hr. Karl Lieberknecht, Inc. (F-7)

Raschel knitter—500 courses per in. on two-guide-bar fabrics. 100-in. width. Two to six guide bars. Power let-off for rubber warps. Kidde Mfg. Co., Inc. (F-8)

Argyle knitting machines—For men's, boys', and misses' rubber-top hose with solid-color effect such as diamonds and squares. 84N x 4½ to 160N x 3½. Carolina Knitting Machine Corp. (F-9)

Extractors—Up to 50-lb. capacity. 3⅓ cu. ft. Speed 1,625 rpm. Fluid-drive coupling. 2-hp. motor. Bulletin 400 Blake Machine Co. (F-10)

AUXILIARY EQUIPMENT

Textile-packaging machine — For sheets, shirts, blankets, pillowcases. No gears or sprockets to change or remove for size adjustments. Hayssen Mfg. Co. (F-11)

Automatic-recording dynamometer—For cotton, wool, rayon, and nylon yarns. Shows resistances from 250 to 1,000 grams, elongation to 40%. Fabbriche Elettrotecniche Riunite. (F-12)

Roving stop motions—Detects drafting-roll lap-up or sliver break. Saves $7,500 in labor costs on 12 frames in one year. Adams, Inc. (F-13)

Lap tester—For laps up to 45 ins. wide. Periodic faults can be spotted. Degree of disintegration and cleaning can be rated. Deutscher Spinnereimaschinebau. (F-14)

Air-cooler units—Can be installed by maintenance men. Require no water or duct work. Two-ton refrigerating capacity to center on hot spots. Simplaire. (F-15)

Hygrometers—For exact atmospheric humidity control. Temperature ranges from −94° F. to +572° F. Measures from 0 to 100% r.h. Hunter Controls, Inc. (F-16)

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READER SERVICE Continued

high, 33 ins. wide, 19 ins. deep. Macbeth Daylighting Corp. (F-17)

Loom cleaner—Cleans multiple rows of looms simultaneously. Installed on rails of warp-beam conveyor. Catalog 25A. Bahnson Co. (F-18)

Automatic counting, recording, and control—For quality control, process control, packaging, production testing, and gauging. Brush Electronics Co. (F-19)

Loom motors — Flywheel produces smooth operation and minimum speed variation. Ball or waste-packed sleeve bearings. Allis-Chalmers Mfg. Co. (F-20)

CHEMICALS AND SUPPLIES

Blue dyestuffs—For cotton and rayon. For goods with anticrease resin finish and where acetate threads are to be left white. General Dyestuff Corp. (F-21)

Textile chemicals—Detergents, wetting agents, emulsifiers, brighteners, sequestrants, dyeing assistants. Antara Chemicals. (F-22)

Lubricants—Entire plant can be lubricated with only six lubricants. Pure Oil Co. (F-23)

Lubrication chart—For spindles, electric motors, reduction gears, hydraulic systems, and air compressors. E. F. Houghton & Co. (F-24)

Double-apron spinning—Black outer face provides right friction for good yarn control. White inner face does not attract loose fibers. Armstrong Cork Co. (F-25)

Building insulation — In standard blocks 12x18 ins. In 2-, 2½-, 3-, 4-, and 5-in. thicknesses and in special shapes. Weight 10 lbs. per cu. ft. Pittsburgh Corning Corp. (F-26)

Textile-mill crayons—19 different colors and white. Large 4 x 1-in. or 3¼ x $\frac{7}{16}$-in. sticks in ½-gross boxes. American Crayon Co. (F-27)

Industrial tapes—To prevent corrosion. Easy to apply. Require no heat or solvents and no drying time. Bauer & Black. (F-28)

Casters and wheels—Typical applications. How to select casters. Caster combinations. The Rapids-Standard Co., Inc. (F-29)

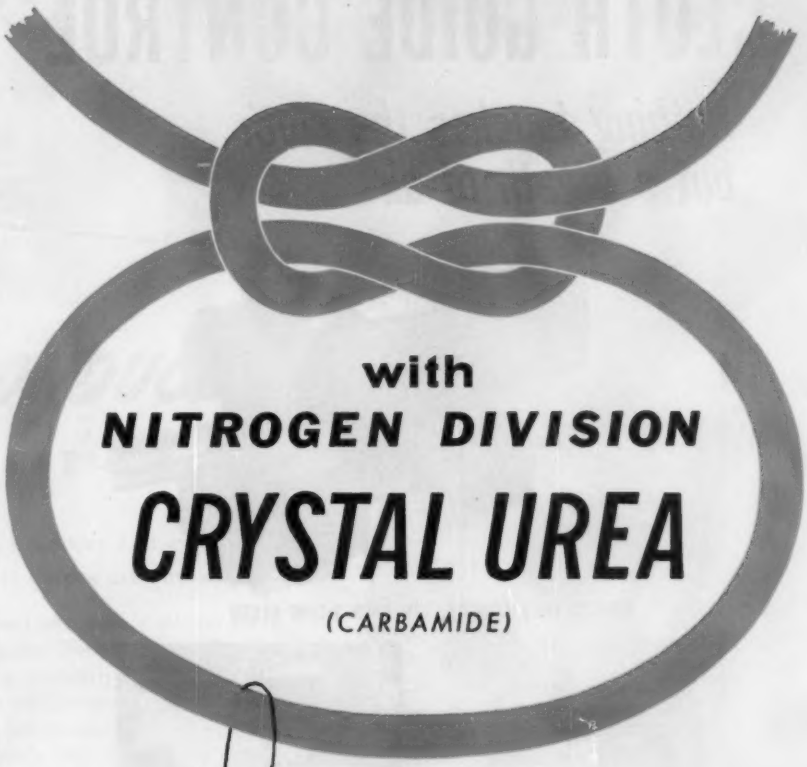
Premixed grout—Ready to use as it comes from container. Add only water and mix. High compressive and impact-resistant strength. Master Builders Co. (F-30)

MAINTENANCE & ENGINEERING

Automatic steam boilers—Gas fired. Hold high or low pressure. Use little floor space. Situated close to operation requiring steam. Bulletin 6H. Mears-Kane-Ofeldt, Inc. (F-31)

Floor-maintenance machine. It scrubs, polishes, washes, buffs, cleans factory floors, grinds concrete, and shampoos rugs. American Floor Surfacing Machine Co. (F-32)

Strengthen Your Ties



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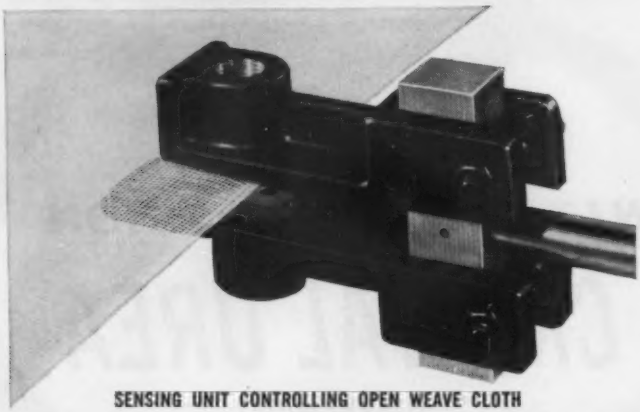
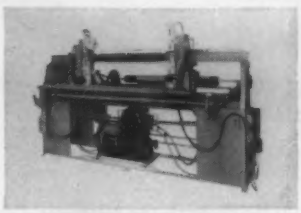
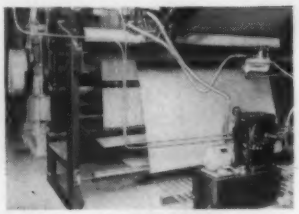


SENSING UNIT CONTROLLING OPEN WEAVE CLOTH



SELVAGE MARKER



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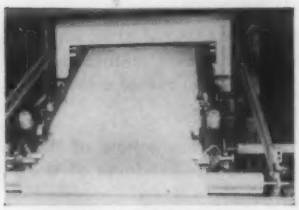

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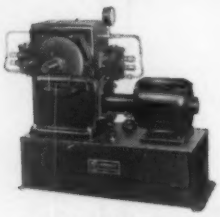

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GENERAL

Handbook of textile fibers—Terms and definitions. Fiber types and sources. Construction and structure of textile fibers. Harris Research Laboratories **(F-41)**

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Packaging—With Permacel tapes. For sealing packages, unitizing cartons, protecting consumer goods. Permacel Tape Corp. **(F-43)**

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ALSIMAG 193 electrically conductive guides in satin finish meet these requirements. TEST SAMPLES FROM OUR FILES ARE SENT ON REQUEST. The illustration shows only a small part of the designs available.

P. S. ALSIMAG 192 (usually considered our standard material) and ALSIMAG 513 (our hardest, strongest, longest wearing material) also solve many guide problems. Any ALSIMAG guide is available in either the satin or polished finish.

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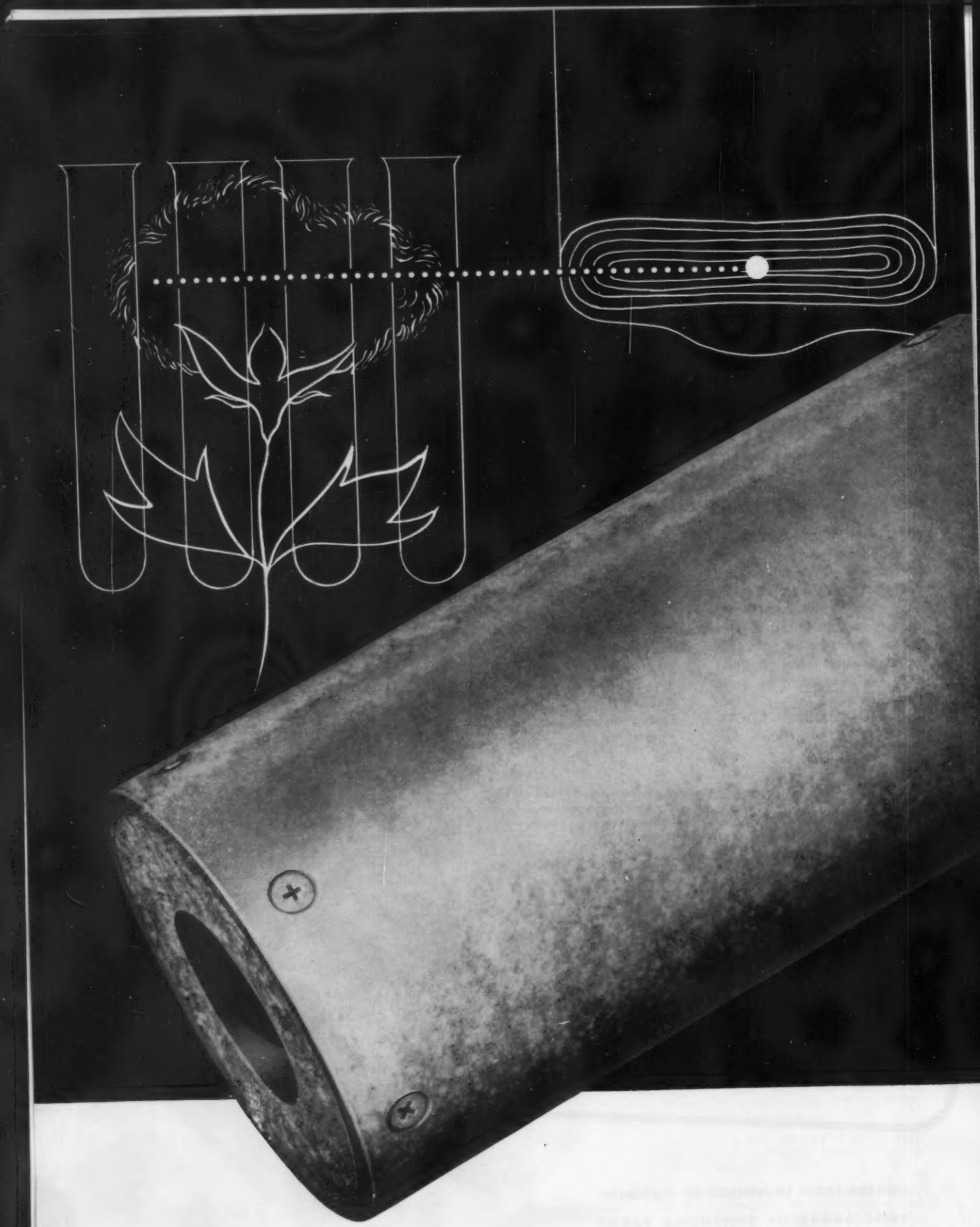

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POINTERS

CONTINUED FROM PAGE 123

and let the supervisor in on the problem or give the employee a chance to get it off his chest. Direct or prying questions should be avoided, as they will often cause the employee to evade or change the subject.

Sometimes the best way to solve a personnel problem is to avoid mentioning the problem at all. Try a casual approach. Start a conversation about something of special interest to the employee—baseball, fishing, cooking, gardening, or any sport or hobby. (The supervisor who doesn't know something of the outside interests of his employees has two strikes against him.) The employee may be stiff and formal at first, but there are few people who will not unbend and respond when given an opportunity to talk about the things that interest them most.

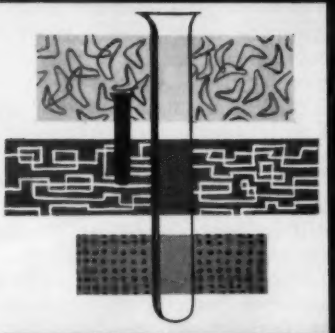
Know When To Stop

The supervisor should know when to terminate the conversation. Maybe the employee will decide it's a good time to air his grievance, and the matter can be brought out into the open and settled. The supervisor may find an opening to ask a few pertinent questions and get to the root of the problem. In the course of the conversation, he may have the opportunity to drop a few hints about the job.

On the other hand, it is entirely possible that the supervisor can walk off without once mentioning the job and leave an employee who is back in the groove and his old self once more, his imagined grievance forgotten.

If supervisors and management would realize that supervision is an art that must be learned and practiced, industrial relations would be greatly improved. Regardless of the natural talent a supervisor may have, he needs extensive training. In this age of specialization, inherent ability is not enough. The supervisor should not only try to improve the work habits and abilities of his subordinates; his biggest job is improving himself. If he would look upon his job as an art instead of a task and take pride in surmounting all obstacles, he would make the job much easier for himself, his employees, and his employer.

Improve textile sizing, printing, finishing



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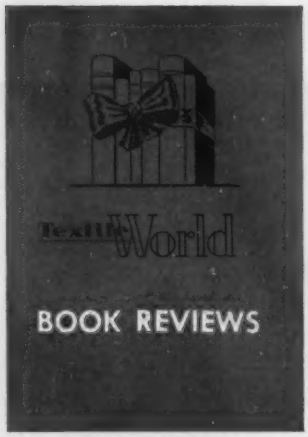


INDUSTRIAL RECREATION, by Jackson M. Anderson; McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y.; 304 pages, $5.00.

This book is not only a guide to conducting an employee recreation program; it gives, in addition, an analysis of the employee recreation program in relation to the various social problems faced by modern industry and to the total community recreation program. Recommendations are documented by reference to the research studies on which they are based.

This comprehensive report includes discussion of financing recreation programs, facilities and equipment, records and reports, publicity and public relations, intercompany recreation associations, and techniques for evaluating the program.

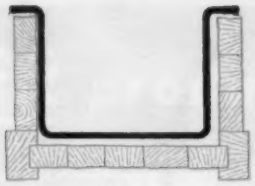
TARIFFS: THE CASE FOR PROTECTION, by Lewis E. Lloyd, Sc.D.; The Devin-Adair Co., 23 E. 26th St., New York 10, N. Y.; 207 pages. $3.50.

Here is one of the few books written in favor of protection. Dr. Lloyd surveys the tariff issue from its origin in 1791 to its effects on wages, production, technical progress, and national defense. He shows how and why our internal economy must be supported and protected by tariffs. The book points out the importance of tariffs to a free world that, instead of staggering into depression, is on the threshold of an unprecedented boom.

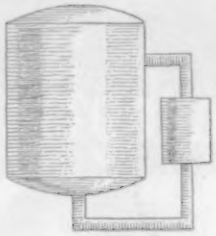
THE MICROSCOPY OF ANIMAL TEXTILE FIBRES, by A. B. Wildman, B. Sc., Ph. D., F. T. I; Wool Industries Research Assn., Torridon, Headingley, Leeds 6, England; 209 pages, two pounds, two shillings ($5.90).

Dr. Wildman gives detailed de-

1929



Stainless steel was first used by textile mills as linings for dye vats. It reduced maintenance and boiling-out time so much that . . .



. . . by the middle thirties, it was used in all kinds of related equipment. And in kiers and other equipment, where strength and cleaning ease were as important as corrosion resistance, stainless found wide use. And now . . .

1935

1955 . . . stainless steel cuts costs in everything from dye house to loom — in finishing, fabric preparation, weaving, knitting, yarn preparation and manufacture.

Crucible stainless types most frequently applied to Textile Applications

STAINLESS TYPE	NOMINAL % Cr	Ni	Other	USED FOR
302	18	8		GENERAL PURPOSE
303	18	8	S	FREE MACHINING
304	19	9	Low C	WELDING
309	25	12		HIGH TEMPERATURE
310	25	20		HIGHER TEMPERATURE
316	18	12	Mo	HIGH CORROSION RES.
317	19	13	Mo	HIGHER COR. RES.
318	18	12	Mo, Cb	WELDING (Stabilized)
321	18	9	Ti	WELDING (Stabilized)
347	18	9	Cb	WELDING (Stabilized)

for tomorrow, too, see why no material can cut your costs like stainless steel

Stainless steel offsets *brutally-hard usage* with exceptional toughness and strength . . . combats *biting dyes and acids* with remarkable cleanability and corrosion resistance . . . prevents *metallic pickup* through its chemical inertness in the dye vat — here again with corrosion resistance. That's why stainless steel is no luxury metal, but *the least expensive material you can buy.*

Whether you're redesigning an old process, or setting up a new one, your Crucible representative can show you how to use stainless to best advantage. In either case, you'll want to see the over-all picture first, so write for your complimentary copy of the 32-page, illustrated booklet, "Making the Most of Stainless Steel in the Textile Industry." *Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

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scriptions and illustrations of animal fibers and provides guides to their identification. An easily applied classification of structural features of animal fibers is also provided. The book contains sections on preparation of the sample and photomicrography and has 253 half-tone and 11 color photomicrographs and 88 line drawings. A detachable scale graduated in microns is included with the book.

BETTER TOOL CRIBS, by William Raisglid; The Industrial Press, 148 Lafayette St., New York 13, N. Y.; 152 pages, $4.00.

This book demonstrates that there is a way to avoid confusion and wasteful methods in conducting tool-crib functions. By illustrated descriptions, the author shows in detail how such items as milling cutters, honing units, counterbores, measuring tools, gauges, machine parts, and other shop tools and materials should be stored.

In addition, several complete control systems based on the use of brass tool checks and triplicate tool charge slips are clearly described. The smallest details of how to store tools and materials and how to maintain proper control of these items are covered.

TEXTILE CALCULATIONS SIMPLIFIED, by J. H. Strong, F.T.I., F.R.S.A.; Transatlantic Arts, Inc., Hollywood-By-The-Sea, Florida; 199 pages, $5.00.

The author gives rules for solving textile calculation problems and examples that demonstrate the rules. The treatment is kept as simple as possible to allow the rules and applications to be understood by those with little mathematical knowledge. Subjects covered run from yarn preparation through weaving and include calculations required for fabric construction and analysis.

REVIEW OF TEXTILE PROGRESS, by The Textile Institute and The Society of Dyers and Colourists; 10 Blackfriars St., Manchester 3, England; 588 pages, $5.00.

This, the fifth volume of *Review of Textile Progress* published by The Textile Institute and The Society of Dyers and Colourists, covers the period 1953 and 1954. The book gives a detailed report of the latest progress in: physics and chemistry of fibrous materials; fiber, yarn, and fabric production; dyeing and finishing; analysis testing and grading; laundering and dry cleaning; building and engineering; and industrial applications of textiles.

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When Your Textile Machinery has

VICKERS Hydraulic Power Units

Dependable and practically maintenance-free, Vickers Hydraulic Power Units are a compact self-contained power source for hydraulic systems on a wide variety of textile machinery. They frequently simplify design and save installation costs. Many are standard stock units while others are individually designed for the machines they serve.

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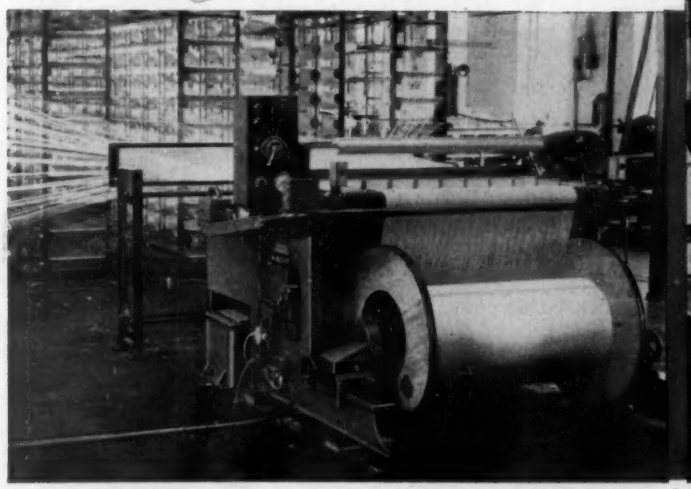

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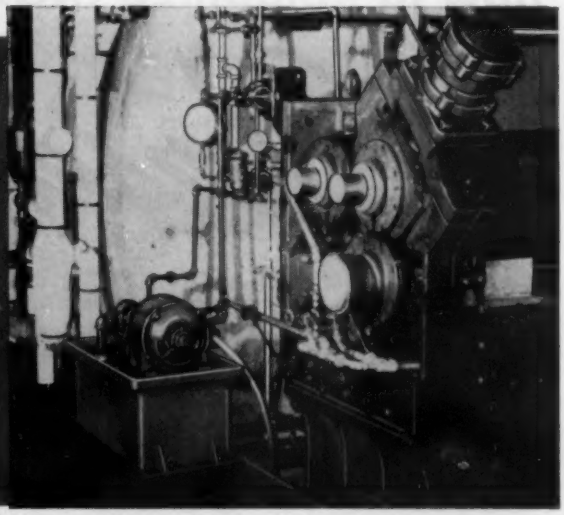
Delivers larger warps of uniform density. Stepless control of beam against press roll prevents scuffing. Vickers Hydraulic System is completely adjustable to meet all conditions. Accommodates beam heads up to 40" diameter.



HIGH TEMPERATURE CONTINUOUS DYEING MACHINE

Provides faster continuous dyeing by dye bath at temperature above atmospheric boiling point in pressure vessel. Cloth passes in and out between rolls that form pressure seal. Nip pressure between rolls is provided and held uniform by Vickers Hydraulics.

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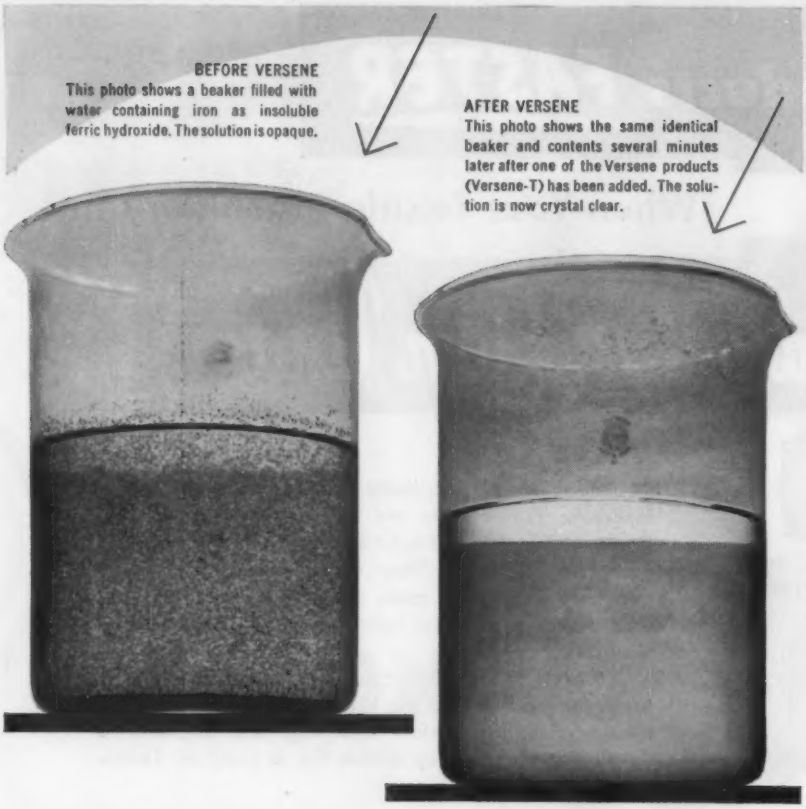
BEFORE VERSENE
This photo shows a beaker filled with water containing iron as insoluble ferric hydroxide. The solution is opaque.
AFTER VERSENE
This photo shows the same identical beaker and contents several minutes later after one of the Versene products (Versene-T) has been added. The solution is now crystal clear.

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Rexolinfabriken Aktiebolag, Helsingborg, Sweden

Weave-Room Organization

CONTINUED FROM PAGE 73

Each loomfixer begins his day's work by inspecting the cloth for defects on all his looms. Then he checks the Stafford thread cutter on each loom to see that it is holding and cutting the filling.

Loomfixers on looms weaving chambrays have 81 looms. There is a total of 11 loomfixers.

Inspection Is Emphasized

Weavers inspect their cloth with a flashlight twice each shift, once at the start of the shift and once at the middle of the shift. A weaver's set of looms is laid out so that weavers have no other duties except a little cleaning. The harnesses and handrails are cleaned once every three shifts. Filling-fork grates are brushed out once each shift. Cloth doffers doff all cloth. A set of looms is 56 looms on chambray and 40 on seersucker.

Two warp men on each shift tie in drawn warps. Their other duties are cleaning empty looms, oiling empty looms by an oiling chart, and leasing warps to be machine-tied.

Warps are tied in the weave rooms with two Barber-Colman L.C.-model portable tying-in machines. There are two tying-in-machine men on each shift. Their only job is to tie warps; they do not lease warps or start them up.

There are three smash hands in the lower weave room. Two smash hands draw in break-outs; the other one picks out bad cloth.

Two smash hands in the upper weave room work together to draw in break-outs and pick out bad cloth. Smash hands in both weave rooms start up tie-backs and see that the loom is making good cloth.

Batteryhands only fill batteries. The jobs on chambray fabrics are 140 looms; on seersuckers, a job is 119 looms.

Constant Cleaning Pays Off

Having an adequate and constant cleaning crew results in better-running looms and better-quality cloth. A cleaning man on the lower floor and one on the upper floor blow off the looms with compressed air each shift. The men also wipe down building columns and wipe off the clock-spring-top harness motions and loom arches with a dry rag.

A sweeper in each weave room on each shift keeps the floor clean. She also takes up waste and carries it to the waste house.

Other cleaning is done by a handy man who can do several jobs. His regular jobs are: (1) cleaning fluores-

Reynolds Metals Company, Pioneers in Aluminum Yarn, Pioneered in the use of DU PONT "MYLAR"*

*Reynolds Aluminum Yarn with Mylar**

was the first successful yarn of this type offered to the industry... developed in 2½ years of experiment...tested and proved in field applications by nationally known mills, on conventional textile equipment. Reynolds experience and Reynolds modern facilities assure unsurpassed dependability of supply and of product quality.

REYNOLDS ALUMINUM YARN WITH MYLAR* OFFERS:

- increased strength over conventional type yarns
- high resistance to temperature in dyeing, finishing, cleaning, laundering
- slit widths down to 1/80 of an inch
- wide range of standard as well as special colors
- excellent resistance to abrasion...with particular adaptability to automotive fabrics

Reynolds Aluminum Yarn with Mylar* available through Reynolds Sales Offices:

Boston—441 Park Sq. Building
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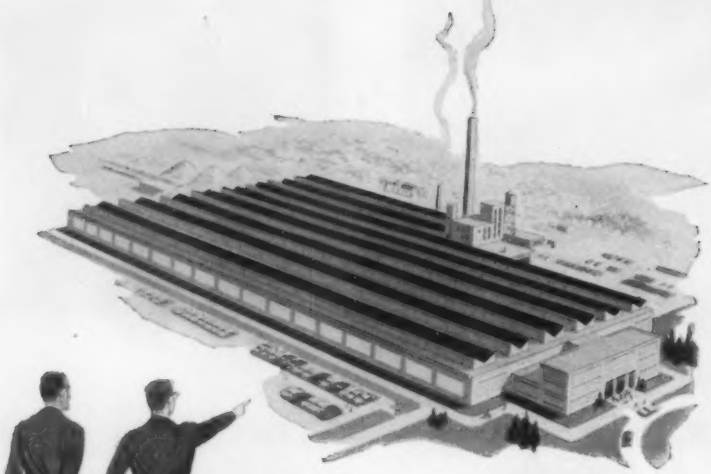
*Du Pont Trademark for its Polyester Film.

 For more information, write direct or use Reader-Service post card.

DO YOUR SCALES ADD UP TO A *Weighing System?*



TODAY IT PAYS TO TAKE A PLANT-WIDE LOOK AT WEIGHING

Do you have the *right* scales in the *right* places? A modern *Weighing System* works hand in hand with your accounting *system* and makes a *big* difference in helping you win your war on costs. Weight records that originate at scales flow to the accounting areas and directly affect costs, inventories and customer billings. Weighing errors cannot be corrected later—weights must be right the *first* time. That's why it's more than ever important to think of weighing not in terms of isolated scales, but as a vital part of your overall cost-control system.

If you would like to explore this in relation to your plant, why not drop us a line today? No obligation, of course.
Ask about the "weighing system plan."
Toledo Scale Company,
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PRINTED WEIGHTS
New Toledo Printweigh Scales meet your needs today for *closer cost control!* Stop human errors in reading, remembering, recording . . . provide accurately printed weights with split-second speed . . . *accurately* recorded!

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HEADQUARTERS FOR SCALES

cent lamps and overhead areas in cycles as he has time, (2) cleaning air-conditioning fans once each week, and (3) emptying loomfixers' scrap boxes regularly.

One employee works between both weave rooms wiping under the ends of looms and around the feet to keep them clean. The floors are maintained with a sealing system periodically, but they aren't buffed.

The weave room is equipped with an air-changing system and humidifier heads. A relative humidity of 80% and a temperature of 80° F. are maintained in cold weather. In hot weather, 85% r.h. and 85° F. are maintained.

Check and Set Dobbies

CONTINUED FROM PAGE 85

starts raising. This condition is caused by the ¼-in. clearance between the hooks and the knives; therefore, the top shed moves down while the bottom shed is still motionless and waiting for the bottom knife to contact the hooks. Momentarily one shed is tighter than the other, and the tight shed is stretched.

The dobby has to be reset to take out this lost motion.

General dobby settings are the same on dobby and plain weaves; but on plain weaves, the distance between the hooks and the knives is less. This setting and a variation in the height of the whiproll make the top-shed line the same distance above the center line of the shed that the bottom shed is below it.

To adjust the dobby for a plain weave after it is already set correctly for a dobby pattern:

1. Adjust the connector heads on the knives at the front of the dobby so that the knives lack 3/32 in. touching the hooks.

2. Adjust the two back knives ⅛ in. from the hooks. This clearance lets the hooks that control the box motion get on and off the knives.

These settings take part of the slant or angle out of the harnesses, and this condition is corrected by raising the jack eyes on every jack instead of staggering them every two jacks as they are done on dobby patterns.

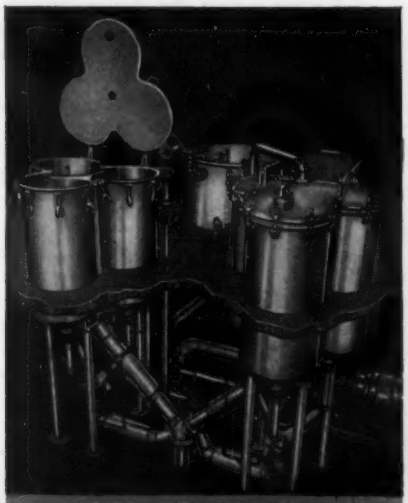
Package Winding

CONTINUED FROM PAGE 89

6. Rayon Cakes

The dry condition of a rayon cake makes it necessary to provide density from other sources than the winder. We designed a cake adapter that supports the cake from the inside and maintains a predetermined compres-

...that's when this absolutely LEVEL DYEING "pays off"!



An exclusive method of cushioning the shock of flow reversal . . . plus our own pump design to obtain high flow at moderate pressure . . . reduce danger of "blown" beams.

Quality in denim, chambray, gingham and similar fabrics, depends greatly upon *uniform color.* This can be achieved only with *yarn* of uniform color . . . yarn without the slightest variation in shade. The Smith-Drum Beam and Package Dyeing Machine is designed to *insure absolutely level dyeing* of a complete set of beams or packages.

Level dyeing is possible *only* when all beams or packages in the same lot are dyed simultaneously in the *same bath!* This Smith-Drum Machine dyes from 2 to 6 beams or yarn carriers under identical conditions of liquor ratio, flow, pressure and temperature . . . with uniform distribution of additions to the dye bath.

If you are interested in truly uniform dyeing results, economy in operation and saving in floor space, it will pay you to discuss this machine with one of our representatives.

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Trouble-Free Knitting
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Good Color Matches-
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Cotton yarns
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are your assurance
of bright,
clear colors,
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One of America's Largest Yarn Dyers.

Globe does package dyeing on tubes, skein and warp dyeing and bleaching, warp mercerizing, and sizing.

Yarns we process include cotton, rayon, nylon, worsted, linen, blend and novelty yarns. Also Acrilian—Dacron—Orlon.

4500 WORTH STREET, JEfferson 5-3301 PHILADELPHIA 24, PA.

sion on each end of the cake. In this way, the predetermined density is maintained and the flow is in one direction only. The same type of adapter is used for drying the cakes after centrifuging. They cannot be pressure-extracted.

7. Wool Packages

Wool and worsted packages are cross-wound on the cotton system. Since the flow resistances of these yarns are lower than cotton, we use a denser wind than for cotton, on single or ply yarn.

Dyeing wool and worsted yarn in package form tends to felt the yarn, with some loss in loft. If loft is required, it is advisable to use skeins and the propeller system for dyeing. The head developed by the centrifugal pump is lower on wool than on cotton, and the lower flow resistance permits a greater flow in the bath.

It has come to our attention that hydraulically pressing wound wool tops under high temperature is being used to increase the weight of the individual top and to increase resistance to the flow. The nature of this yarn permits too high a flow rate in dyeing.

We have successfully used the pot system, in which the individual top is placed in an individual container (4, 8, 12, and 28 pots). An exceptionally low-head centrifugal pump is used at a low speed. The tops are snugly fitted in the containers, and the flow is controlled by orifices.

Another method successfully used is the conical perforated spindle. Three tops are placed on each spindle, and an adjustable compression cover is used during the dyeing process. The original cost of dyeing by this method is considerably lower than the pot system. It produces well-dyed tops, and the propeller provides more than adequate flow and pressure.

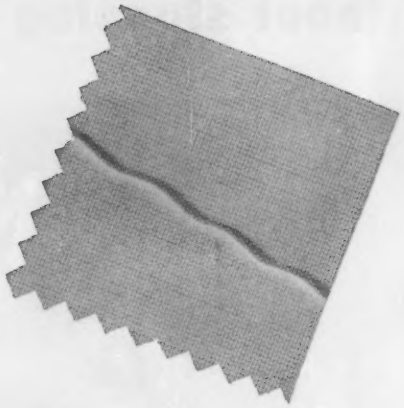
Because of the physical structure of wool in the spun state, we do not believe that pressure is practical for leveling density of wound wool packages. All yarns wound on packages have a greater density on the inside of the package than on the outside. The differential is important in controlled winding.

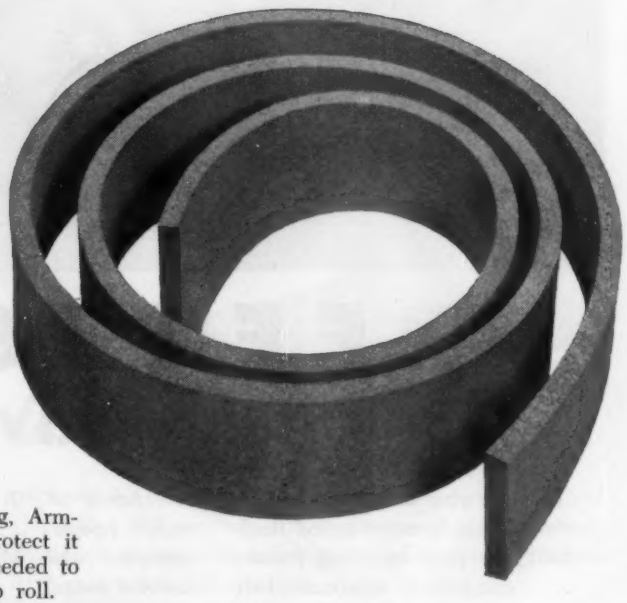
Dyehouse Orders

CONTINUED FROM PAGE 94

of each beam upon which each dye lot, or portion of a lot, is wound. One beam ticket is placed in the section of the file in the production office that corresponds with the jig or beck on which the lot is to be dyed. All processing detail is now established. The dye lot has been allocated to a certain

reduce fabric creasing..... with this loom press roll covering...





No matter how delicate the cloth you're weaving, Armstrong DK-149 Press Roll Covering will help protect it from creasing. This covering has the resilience needed to hold fabric firmly and evenly against the take-up roll.

Armstrong DK-149 is a sponged synthetic rubber reinforced with cork. No high or low spots can develop in DK-149's long-wearing surface. Yet this surface won't mark the cloth, despite its firm grip.

Next time your Armstrong representative calls, have him set up a test of DK-149 Press Roll Covering. It comes in handy ribbon form for easy application.

Send for the booklet, "Armstrong Textile Roll Coverings and Mill Supplies." Write Armstrong Cork Company, Industrial Division, 6907 Dauphin Street, Lancaster, Penna.

Armstrong LOOM SUPPLIES

... used wherever performance counts

Loom Clutch Discs and Inserts · Loom Brake & Let-Off Strips · Take-Up Roll Coverings · Temple Roll Coverings

Adjust your Spinning Speeds without stopping the frame!

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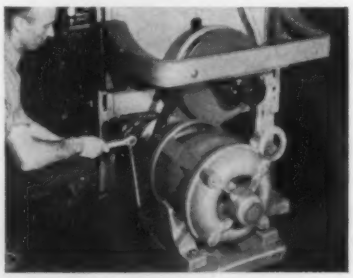
VARI-SPIN DRIVE

● Now you can obtain new versatility, greater speed flexibility in your spinning frames . . . completely eliminate belt changes and pulley changes . . . cut downtime to an absolute minimum . . . simply by installing REEVES new Vari-Spin Drives using your present NEMA frame motors! REEVES Vari-Spin Drive gives you complete speed adjustability to provide the exact spinning speed you need for any yarn set without stopping the frame . . . *completely eliminates old-fashioned trial and error methods of "hunting" for exact speeds* . . . all in one compact unit which nests in narrow aisles!



TURN OF A SCREW changes spinning speed. Speed changes are immediate and positive . . accurate to a fraction of an rpm.

Send today for new Vari-Spin Bulletin W6g-S

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Division of Reliance Electric and Engineering Co.

machine, and the file becomes a reference point for each department head.

At the end of each shift, departmental records are sent back to the production office. When a lot is reported as dyed, the office copy of the beam ticket is shifted to holders in the finishing-operations rack. There are sufficient holders to carry all the lots that may be dyed in any 24-hr. period seven days in the week. Movable colored tabs identify the days of the week. Monday's dyeings carry a yellow tab positioned under the space marked "dyed" at the bottom of the beam ticket. Each day, as finishing progresses, the tab is moved along under spaces marked for finishing, tubing, and examining and packing.

When the final invoicing sheet that shows that the lot is packed comes to the production office, the beam ticket is taken from the file. The invoicing sheet is checked against a copy of the original combination form, and the lot is closed out.

The same process is used for dyeings made on other days of the week. Tuesday's work carries a purple tab, Wednesday's a tan tab, and so on. Rehandles get a red tab and extra attention in the plant.

System Is Helpful

Departmental foremen refer to the file frequently to help with their planning. The production office relies on the system to check lot progress and answer customers' questions, as well as to obtain complete daily records of closed-out lots. By watching a lot's progress and referring to the delivery date, the production-control department can closely predict if the date is going to be met.

The system is particularly valuable when the plant is unusually busy and when there are many small lots or samples going through. The compact layout is valuable where space is at a premium.

Lint Problems

CONTINUED FROM PAGE 97

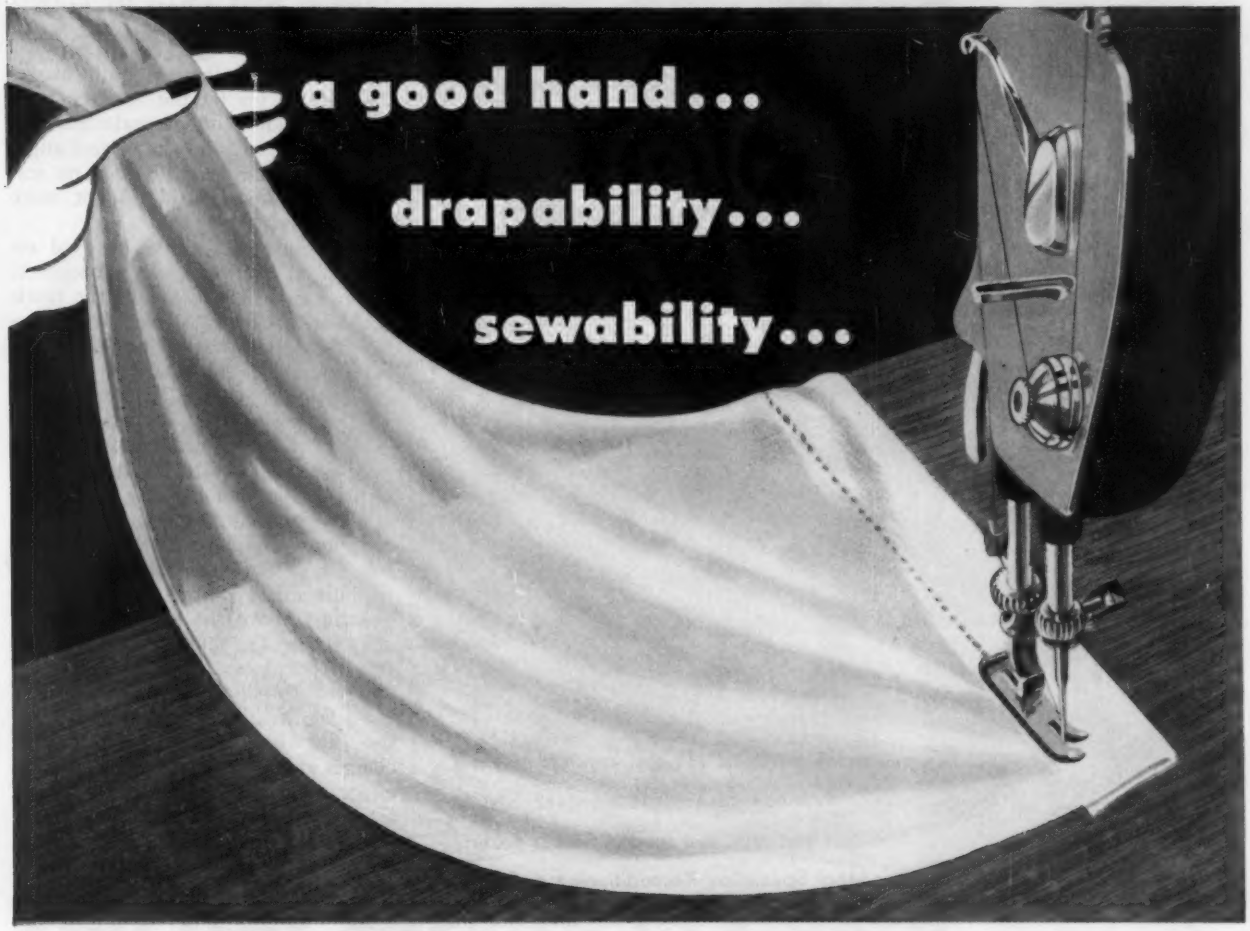
and the top and bottom tension rings.

Circular brushes are used at Roanoke Mills, Roanoke, Va., to keep lint from the cylinder slots above the cam sections. Two circular brushes rotate, one above the other, on a wire fixed to the cylinder-shoe screw. The wire is bent to form a spindle, and the brushes are turned by the cylinder rotation.

New Methods on the Way

Several other ideas have been tried but to date have not met with much success. One of these ideas is for

Give your non-woven fabrics



with NITREX 2614!

Nitrex 2614 is a solvent-resistant synthetic latex developed as a binder for non-woven fabrics. Curing at low temperature without sulphur or accelerators, Nitrex adds a softness to the film—adhesion to the fibers—strength and resilience to the fabric.

Non-woven fabrics processed with Naugatuck's Nitrex 2614 can be sewed...will drape naturally and easily...resist dry cleaning oils and solvents. Curing at low temperature without sulphur or accelerators, there is no possibility of discoloration of dye shades during vulcanization.

A new nitrile-type latex, Nitrex 2614 can be used for non-woven fabrics ranging from light, gauze-like to heavy, felt-like materials. All these materials may be printed, dyed, sewed, and glued. They will not ravel and are lintless. Highly absorbent, with a soft, chamois-like feel when wet, Nitrex®-treated fabrics have exceptional wet strength.

In addition, Nitrex 2614 can be used as an aggressive adhesive for binding cotton or rayon fibers, paper, polyvinyl chloride film and metal foils.

The world's leader in the field of natural and synthetic latices, Naugatuck will be glad to supply you with additional factual material or expert technical assistance. Simply write to us on your company letterhead. Why not write today?

Naugatuck Chemical

Division of United States Rubber Company
Naugatuck, Connecticut

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Rubber Chemicals • Synthetic Rubber • Plastics • Agricultural Chemicals • Reclaimed Rubber • Latices • Cable Address: Rubexport, N. Y.

Don't Buy New Top Rolls

We can prove that your old cast iron top rolls will give better service than new case hardened steel rolls, or new cast iron rolls. Just send us half a dozen worn rolls for Ideal Specialloy Reconditioning and then test the results for yourself. There is no charge for this.

Here is what you will discover:

SADDLES AND CAP BARS will last longer.

NO OIL SPOTS. Unlike case hardened steel top rolls which reject oil, Specialloy treated rolls *absorb* oil enough to run 2 to 4 weeks without attention. Saves on oiling labor and keeps oil off the stock.

TOP ROLLS, as well as top roll assemblies, last longer, and can be reconditioned again when they finally wear. Don't buy new top rolls, because Ideal Specialloy Reconditioned top rolls are better. Ask for a test today.

Ideal Machine Shops, Inc., Bessemer City, N. C.

Continuous Service to Textile Mills Since 1925

small-diameter high-speed rotating-head machines. Several vanes were fixed to the bobbin-carrier rods to direct air down toward the cylinder and needles.

On machines that rotate at more than 100 rpm., there is quite an air current set up by the rotating yarn cones. If the correct materials, the correct position, and the correct angle of the vane are used, there is no reason why this idea should not work successfully.

The same idea could be used on high-speed spring-needle machines. Vanes could be attached to the rotating side brackets to direct an air current to the needles and burrs. A snag here might be the hazard to workers.

One mill tried smaller holes in the bottom tension ring eyelets to prevent lint being pulled through to the needles, but the yarn invariably broke at the needles and caused a press-off.

One interesting experiment is being carried out to eliminate the lint problem. A device consisting of an electrostatic shield is fixed on the bobbin pole just above the needles. Lint is attracted to the shield by the electrostatic forces, and the minute fibers cling to the shield.

So far there are two snags. One is the fire hazard that electrostatic charges and accumulations of lint will create. The other is how the fibers are to be removed when enough lint has accumulated.

So far, the most practical methods of dealing with the lint problem are to keep humidity high and have regular cleaning methods with automatic and manual cleaning in combination with overhead cleaners to prevent lint accumulations.

Spinning Methods

CONTINUED FROM PAGE 103

yarn strength increased 6 to 8%; top rolls require additional weighting; additional cleaning is anticipated.

Four Frames Compared

Mill C—Experience with four different kinds of frames were reported.

Duo-Roth (filling): Draft limits, 12 to 25; ends down, 40; break factor, 1,828; rolls cleaned every six months

Whitin (warp): Draft limits, 12 to 25; ends down, 42; break factor 1,953; rolls cleaned every four months

Shaw (warp): Draft limits, 12 to 25; ends down, 38; break factor, 1,925; rolls cleaned every six months

H&B (four-roll, warp): Draft limits, 8 to 17; ends down, 46; break factor, 1,970; rolls cleaned every 12 months

The mill said that on these frames, roll run-outs must be held to a closer tolerance, rolls must be picked more often, lumps form under aprons, and

when you order

You Get Service in Depth

DELIVERY SERVICE—SOLVAY'S production centers, warehouses and distribution points are strategically located to give you quick, efficient deliveries. Whether you order single unit cars or a few cylinders, SOLVAY'S *personalized service* is geared to fit your *individual needs!*

TECHNICAL SERVICE—Because SOLVAY'S Technical Service has a *separate* section that works *exclusively* with chlorine problems, SOLVAY can offer you chlorine Technical Service not ordinarily available. This *specialized* service is available without charge to users of SOLVAY Chlorine.

SAFETY SERVICE—SOLVAY has long been recognized as the leader in the development of safety programs. SOLVAY engineers were also pioneers in the development of special kits for emergency repairs to all types of SOLVAY Chlorine containers.

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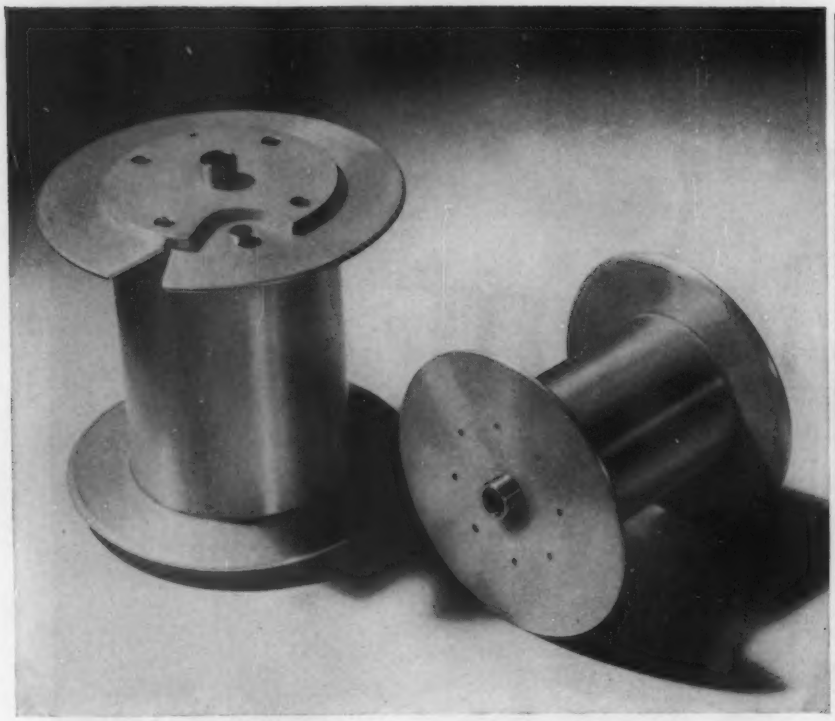

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At last, a strong, durable bobbin made by brazing aluminum heads to an aluminum barrel. The brazing forms a one-piece bobbin with no cracks or possible openings to trap yarn.

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*Pat. App. for

BWMACK **ALLENTOWN BOBBIN WORKS, INC.**

ALLENTOWN PENNSYLVANIA

top rolls require additional weighting.

Mill H—Draft limit on 52 frames equipped with Whitin Super Draft cradles is 6 to 25 on 8s to 22s. Previous maximum draft was 16. Variation is about the same. If cradles are cleaned every four months, no increase is noted in ends down. It has not been necessary to increase the weight on the top rolls.

Uniformity Is Improved

Mill J—Draft limits are 10 to 14, but 20 is about average. Yarn strength and uniformity have improved on the cradle-and-roll system; but on the no-oil type, trouble has been experienced in keeping the cap-bar fingers in line. Cradles and aprons are removed and cleaned every three months. Weight has been added to the $1\frac{1}{8}$-in. apron rolls but not to the $\frac{3}{4}$-in. rolls.

Mill K—Draft limits are 18 to 30, with 20 to 24 giving the best results. No improvement has been noted in yarn strength, uniformity, or ends down. No additional cleaning has been done to date; but the mill feels sure that if it changes over completely, one special clean-off hand will have to be added for every 40 frames running 10s to 25s. The mill complained of excessive apron replacement and said that additional weighting of top rolls gives no improvement.

Rewound Filling

Three mills reported experiences with rewound filling. All agree that quality is improved. No reduction in cost was reported, but the general feeling is that improved quality of cloth is worth the cost of the machines.

Mill C—Rewinds 0.11 lb. of 12s to 22s rayon onto an $8\frac{3}{4}$-in. quill. Fabric construction are 60-in., 2.40, 56x56 and 59-in., 1.85, 68x40.

Mill I—Rewinds 0.1035 lb. of 34.50s and 0.1175 lb. or 22.50s on quills. Fabric constructions are 94x88 for the 34.50s and 64x64 for the 22.50s.

Mill K—Rewinds 0.144 lb. of 13.30s onto an $8\frac{3}{4}$-in. quill. Fabric is 59-in., 1.85 drill.

Picker Laps

CONTINUED FROM PAGE 107

Fig. 1, the thickness of feed when the belt is at the top of the cones is:

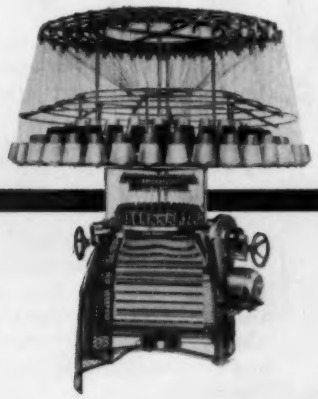
$$\frac{0.88N}{0.66} = 1.33N$$

With the belt at the bottom of the cones, the thickness is 0.66N.

In other words, the cones in Fig. 1 are capable of adjusting the feed roll to compensate for variations in thickness of the feed between $\frac{3}{4}$ and $1\frac{1}{4}$ of

TORRINGTON NEEDLES

help maintain high-speed production on the Supreme SAAF/O Machine...



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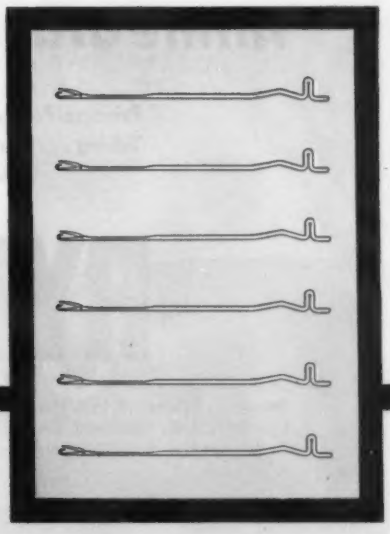

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normal thickness. Feed variations outside these limits will not be compensated for by the cone drums.

Velocity Ratio

A one-third increase over normal thickness will move the cone belt from the middle to the top of the cones. A reduction of one-third will move the cone belt to the bottom of the cones. This distance in the arrangement in Fig. 1 is $5\frac{1}{2}$ ins. So the velocity ratio between the pedals and the cone-belt guides must be considered:

The ratio should be:

$$\frac{5\frac{1}{2}}{\frac{1}{3}N} = \frac{16\frac{1}{2}}{N}$$

Any ratio less than this will not move the cone belt far enough on the cones, and any greater ratio will move the belt too far.

For example: Suppose the standard lap weight is 45 lbs., and the average lap weight with the belt in the center position is 42 lbs. When the picker is working under normal conditions (with the regulator motion operating), the cone belt will have an average position lower than the center. The velocity ratio of the two cones to produce a standard lap must be:

$$\frac{0.88 \times 42}{45} = 0.821$$

To find the position of the cone belt to give this ratio:

Let x = diameter of driven cone

y = diameter of driver cone

Then

$$\frac{x + \frac{7}{16}}{y + \frac{7}{16}} = 0.821$$

Since $x + y = 13\frac{13}{16}$, the solution to these equations will give us the diameters: a $6\frac{1}{4}$-in. driven cone and $7\frac{13}{16}$-in. driver cone.

When the normal thickness is 0.5686 in., a change of $\frac{1}{3}$ thickness (in this case, 0.1895 in.) gives $5\frac{1}{2}$ ins. of movement to the cone belt.

Thus, by measuring the vertical distance between the middle of the driven cone ($6\frac{1}{2}$ ins. dia.) and the $6\frac{1}{4}$ ins. dia. needed to produce a standard lap, the actual thickness of the material fed can be calculated.

Let the distance between the two diameters be 1 in. Then the thickness of the feed must be:

$$0.5685 - \frac{0.1895 \times 1}{5\frac{1}{2}} = 0.534 \text{ in.}$$

Alternative Solutions

In this example, there are several choices:

1. The standard could be changed

"Seconds" by the mile when you're running faille?

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to 42 lbs. In this case, the regulator motion would have to be readjusted.

2. The thickness of the feed can be increased to 0.5685 in. This choice would mean a large number of reject laps while experiments are made with the feeding arrangements. Consequently, this approach is not often used.

3. The draft between the pedal roll and the lap roll can be changed to give the standard lap weight. This solution can be used rarely—when a gear change of one or two teeth coincides exactly with the desired change in weight per yard. In any case, the regulator motion has to be readjusted to compensate for the thinner bulk of the stock fed.

4. The length of the lap can be changed to give the standard lap weight. This approach seems to offer the most practical solution. The regulator motion has to be readjusted with a gauge (Fig. 5), 0.534 in. thick, and the velocity ratio between the pedal and the belt guide has to be changed.

From Fig. 3, it can be seen that the ratio can be altered by changing the fulcrum *C*. The other levers are usually fixed and more difficult to change.

How To Set Fulcrum

The velocity ratio has to be changed to move the belt $5\frac{1}{2}$ ins. for a variation of a third of the normal thickness, 0.534 in. in this case. So the ratio needed is:

$$\frac{5\frac{1}{2} \times 3}{0.534} = 30.9$$

Since the fixed levers give a ratio of:

$$\frac{27}{4\frac{7}{8}} \times \frac{23\frac{1}{2}}{11}$$

the contribution of the lever with the movable fulcrum must be:

$$\frac{30.9}{\frac{27}{4\frac{7}{8}} \times \frac{23\frac{1}{2}}{11}} = 2.61$$

With x = distance of chain from fulcrum
y = distance of pedal connection from fulcrum

$$\frac{x}{y} = 2.61$$

and $x + y = 25\frac{5}{16}$,

the solution of this equation gives the distance of the chain from the fulcrum: $18\frac{5}{16}$ ins.

Slasher Size Box

CONTINUED FROM PAGE 113

The reverse yarns run over a stainless-steel roller when they come from the original size box and go through the blanket-covered squeeze rolls of the second size box, where they're

IN

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tinted. From the squeeze rolls, they run around a stainless-steel roll positioned at the bottom center of the first slasher cylinder, where they contact the cylinder. This position is about 5 ft. from the squeeze rolls. Then the tinted yarns are dried on 5 ft. of cylinder surface before they rejoin the regular yarns. By this time, the tinted yarns are dried sufficiently to prevent bleeding.

The temperature on the bottom cylinder is 195° F.; on the other two, it's 210° F. These are the normal temperatures run on all slashed warps.

From the point where the tinted ends and regular ends join at the first cylinder, the ends are threaded in the conventional way to the loom beam. A lease is run when each loom beam is doffed so that ends can be tied more easily with a portable tying-in machine. Warps are also drawn on a drawing-in machine.

Tinting Makes Weaving Easy

At the tying-in or drawing-in process, a lease string is left in the warp and is replaced at the loom with a lease stick that separates the reverse ends from the regular.

Weavers have little trouble in distinguishing the reverse ends from the regular because they're run over the lease sticks and the bluish-pink tint is easily seen. Consequently, ends are never mixed in weaving.

All warps with both regular- and reverse-twist ends are run on X-2 looms. Second-quality cloth is 0.5% at present. Production is 94%.

Superintendent W. O. Ruffin estimates that seconds would be 6 to 7% and production would be around 90% if the reverse-twist yarns were not tinted.

The additional size box is used as an attachment and not as a piece of regular equipment. When warps with both reverse- and regular-twist yarns are not being run, the second size box is not used and the warp ends are run over it.

Unnecessary Waste

CONTINUED FROM PAGE 117

normally. If they are stored too long, they expand and become fluffy and are too hard to straighten up at the cards. Proper training of card hands in laying in laps will save much lap waste.

. . . At Cards and Drawing

After stripping and grinding, you don't want to piece up cards until the sliver weight picks up to normal; neither do you want to let it run without piecing it up after the weight is up. Sliver-weight tests will show you

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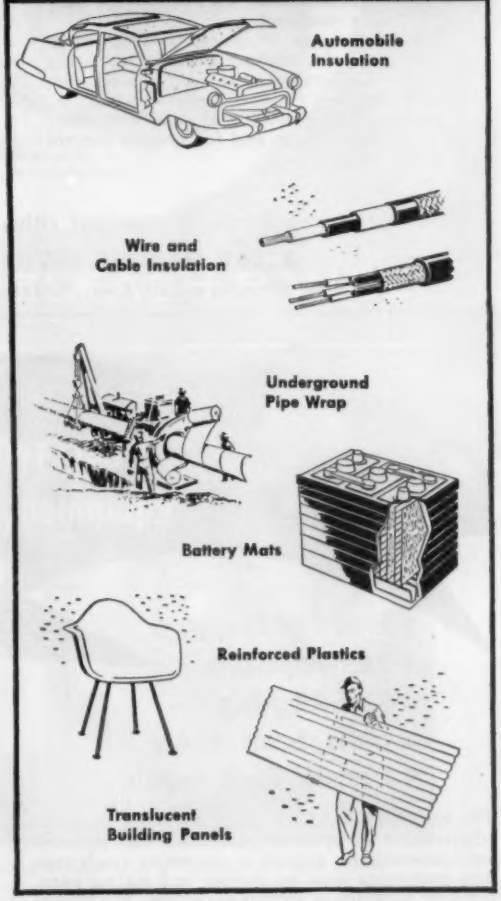

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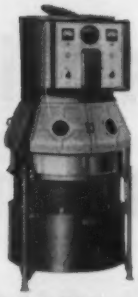

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when to piece up, and often good stock can be saved.

Good practice in creeling sliver cans at drawing and roving frames will save much good sliver. Can-back drawing frames should be equipped with yardage knock-offs so that all cans will contain the same approximate amount of sliver.

Standards vary between mills, but generally it is a good practice to require that operators dump cans if they contain ¼ lb. or more of sliver.

. . . At Frames

Roving left on bobbins when they are replaced in the creel by full bobbins should be held to a minimum. The point at which your operator takes out bobbins will have to depend on how the bobbins are cleaned and on the operator's work load. Generally, if a speeder hand or spinner has to wind the roving off by hand, she will not take bobbins out of the creel until they are almost run out. If a bobbin stripper is used, she will not worry too much about how much roving is left on. New bobbins should not be creeled until at least some of the wood is showing on the old bobbin. A good practice is to require that half the bobbin shows.

Spinning bobbins and quills will sometimes get tangled because of bad handling. Boxes should be dumped as few times as possible to minimize damage.

Electrical Equipment

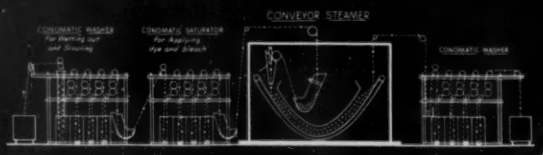
CONTINUED FROM PAGE 121

old card was removed from. The card is marked to show the date the motor was withdrawn from spare stock and the production machine it was installed on.

This arrangement gives a life record of each motor on the back of the motor card, no matter how many machines the motor has been installed on during its service.

All the information required on a simple motor-and-control setup, such as on a spinning frame, is kept on the cards; but a complex installation, such as a multimotor drive on a dyeing machine, requires more room for record keeping. A single pocket is made for each complex unit; and the full-size card in the pocket contains, for example, only this information: "Refer to detail file for No. 4 dyeing machine." This detail file is a 8½x11-in. folder with filing prongs.

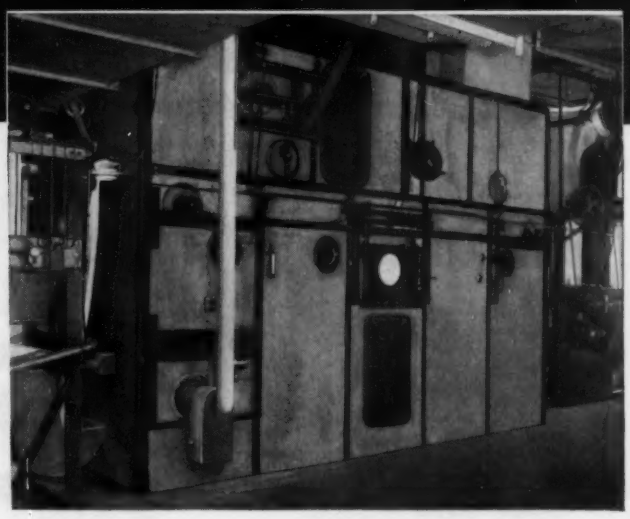
On machines such as pickers that have only four, or fewer, motors, we use four cards in the top leaf of the pocket; and by filing the cards at the



Installation View of Con-o-matic Washer in Continuous Bleach Range.

For improved quality of knit goods and profit making production . . . install a

PROCTOR CONTINUOUS BLEACH RANGE



Installation View of Steamer Unit in Continuous Bleach Range.

This range has been field proven, and is now producing highest quality tubular knits at the P. H. Hanes Knitting Co., in Winston-Salem, N. C. Through the use of a Con-o-matic Saturator, this range is adaptable to be used in applying fluorescent dye, which is one of the latest techniques of the knit goods industry.

Discuss the possibilities of adding a Proctor Con-o-matic washer to your present production set-up. The tapered squeeze rolls (Pat. app. for) assure a continuous trouble-free, tension-free operation.

Proctor engineers will be glad to discuss your knit goods problem with you at your earliest convenience. Why not present your problem to men who can help you.

WRITE FOR DETAILS—PROCTOR & SCHWARTZ EQUIPMENT FOR THE TEXTILE FIELD

AUTOMATIC BLENDING SYSTEMS • WEIGHING FEEDS • PICKERS • SHREDDERS • BALE BREAKERS • SYNTHETIC CARDS • GARNETTS • DRYERS FOR FIBROUS MATERIAL • YARN DRYERS • HOT AIR SLASHER DRYERS • CLOTH CARBONIZERS • ROLLER DRYERS AND CURERS • LOOP AGERS FOR PRINT GOODS • TENTER HOUSINGS • OPEN-WIDTH BLEACH SYSTEMS FOR WOVEN FABRICS • MULTIPASS AIRLAY DRYERS • NYLON SETTING EQUIPMENT • CON-O-MATIC WASHERS • CONTINUOUS BLEACH SYSTEMS FOR PRODUCING TUBULAR KNITS EQUIPMENT FOR "SEDGWICKIZED"® SHRUNK-TO-FIT FABRICS • CARPET DRYERS

PROCTOR & SCHWARTZ, Inc.

Manufacturers of Textile Machinery and Industrial Drying Equipment. Philadelphia 20, Pa.

 For more information, write direct or use Reader-Service post card.

PAGE chain link FENCE
America's First Wire Fence—since 1883

• You need a fence if your property lacks protection against common hazards. And you certainly want time-tested quality in the safeguard you provide. Whether you choose heavily galvanized Copper-Bearing Steel, corrosion-resisting Aluminum, or long-lasting Stainless Steel, PAGE Fence is quality controlled from raw metal to rugged fence erected on metal posts deep-set in concrete. Available are 8 basic styles, varied by heights, types of gates, top rails, and barbed wire strands for added security. Finally, your PAGE Fence will be expertly erected by a reliable, technically trained firm. For important fence data and name of nearest PAGE firm—

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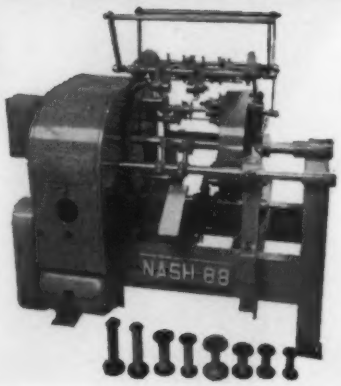
PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

"Neither SPINS Nor WEAVES"

Yet Essential for True QUALITY Production! . . .



This NASH 88 Automatic Bobbin Refinisher produces no yarn or fabric — but it does prevent the defects in spinning or weaving due to rough bobbins.

HOW IT FUNCTIONS . . . The NASH 88 refinishes throwing and twisting bobbins at the rate of ten pieces per minute. It provides controlled abrasive action on the barrel, inside flanges, and over top radius of flanges. Burnishes inside surface and top radius of fibre flanges. Removal of all roughness prevents tearing of filaments from rough bobbins. *Cleans* as well as refinishes.

SPECIAL FINISHING MACHINES NASH SINCE 1890

J. M. NASH Company

2364 N. 30th Street • Milwaukee 10, Wisconsin

front and back, we keep the information on four motors and associated control equipment without setting up a separate file.

The filing system contains a pocket for each individual motor-driven machine in every process of the mill up through spinning. One example is card line-shaft motors and accessory equipment.

Several Plants Are Covered

The pockets are grouped in drawers according to the plant and the mill section. For instance, there's a drawer for the White Oak Plant warp-spinning equipment, another for the filling spinning, and another for the card room, etc. A separate cabinet is provided for the Proximity plant and for each of the other plants that are served.

Cards are furnished at the end of each room-group of pockets for accessory equipment such as ventilating fans, condensate pumps, and unit heaters.

There are too many motors in the weave room to carry an individual card record for each motor; therefore we carry all loom motors handled by a group starter on one card. The number varies somewhat but generally runs in groups of about 100 looms. Approximately 30 cards cover the 3,152 looms in the White Oak weave room.

A colored-plastic index tab on each pocket is arranged so that it can indicate any month of the year. The tab operates as a visible reminder of maintenance dates that have been scheduled.

At the beginning of each week, the record man goes through the drawers of the files to see what reminder tabs are located for scheduled maintenance work during that month. He may pull off data on 10 spinning frames, one section of looms, and three service water pumps to be checked during the month.

He then writes the necessary orders to the maintenance electricians so that the listed motors are checked and their condition noted on the back of the job ticket. The job ticket is returned to the record man for the information to be posted on the history card for each motor or piece of equipment involved. At the time he posts the history card, he moves the tab to the next scheduled inspection date.

Similar records are also kept on major power equipment such as oil circuit breakers, transformers, high-voltage feeders, main feeders, and all other equipment that requires careful planning and maintenance to insure the full expected life.

MONSANTO TEXTILE TALK

RESLOOM* gives fabrics a beauty treatment that doesn't wash out!

DRESS: "EVERGLAZE" COTTON BY SPORTWHIRL

HAND AND APPEARANCE ARE PERMANENTLY IMPROVED WITH MONSANTO'S MELAMINE RESINS

More and more mills are turning to Resloom to finish cottons and wools, pure synthetics and blends.

Resloom-treated fabrics have superior hand, improved tailoring properties, quality feel and appearance. But even more important, they retain their freshness and newness after countless washings or dry cleanings.

That's because Resloom HP and M-75 are *melamine* resins, specially formulated by Monsanto for maximum durability. They do not coat the fabric. They are deposited inside absorbent fibers and within the weave of fabrics made of synthetics. They remain there for the life of the fabric.

Only small amounts of Resloom are required. Melamine is less affected by laundering and cleaning than any thermosetting resin. It has remarkable water-, alkali- and solvent-resistance.

Though extra hard, Resloom resins do not create a harsh hand when the fabric is properly impregnated. They can create a wide variety of handling characteristics from soft and full to firm and crisp.

Treatment with Resloom develops excellent crush resistance, dependable shrinkage control and novel surface textures. A Monsanto representative will be glad to work with you on technical problems relating to special finishes. Write Monsanto Chemical Company, Plastics Division, Dept. TW-7, Springfield 2, Mass.

*RESLOOM: REG. U. S. PAT. OFF.

It pays to finish fabrics with durable

RESLOOM *MELAMINE RESINS*

MONSANTO

Serving industry . . . which serves mankind

LAUREL EMULSIONS

leave your cotton yarns— dyed or bleached —softer, more easily knit

The efficiency of HYDROCOP and 3B SOFTENER, the famous Laurel twin Emulsions on your cotton yarns—combed and carded—will surprise and please you. They properly condition dyed, bleached or natural yarns; speed twist-setting and produce even-running, more easily knit yarns. Never become rancid. Do not discolor yarn on standing. Simple to apply over roller throughs on cone winders, quilling frames or twisters. Improve your yarns as other leading knitters do—with Laurel Emulsions. Send for trial order and formula for use.

TEXTILE SOAPS OILS FINISHES

ESTABLISHED 1909

Laurel SOAP MANUFACTURING CO., Inc.

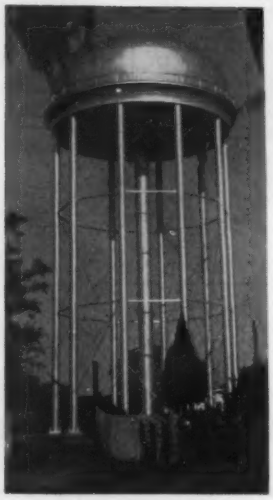
Wm. H. Bertelsen's Sons

WAREHOUSES: Paterson, N. J. Chattanooga, Tenn. Charlotte, N. C. • OFFICES: 2600 East Tioga Street, Philadelphia 34, Pa.

TANKS AND VESSELS FOR THE TEXTILE INDUSTRY

● COLE builds elevated tanks and vessels to your specifications — dye-vats, kiers, starch-kettles, acid tanks, jib-boxes, or other processing vessels for the finishing and dyeing industry . . . in stainless steel, nickel-clad steel, or of standard steel lined with Monel metal.

Our long experience in the design and fabrication of vessels for the textile industry may be of help to you. Write for latest COLE catalog—*Tank Talk.*



Established 1854

R. D. COLE Manufacturing Co., Newnan, Ga.

- TANKS
- TOWERS
- CYLINDERS
- VESSELS
- STANDPIPES

Handling Equipment

CONTINUED FROM PAGE 91

►A platform truck at a cost of only $505 was shown by Stokvis, Edera & Co., Port Washington, N. Y. The truck is said to be ideal for transporting plumber's equipment and other maintenance equipment to production departments of a plant. **(A-34)**

►The Lock-Load Palletizer was part of a completely automatic materials-handling system shown by Food Machinery & Chemical Corp., Riverside, Calif. The machine places up to 36 cases a minute on pallets with safety and precision without any manpower. **(A-35)**

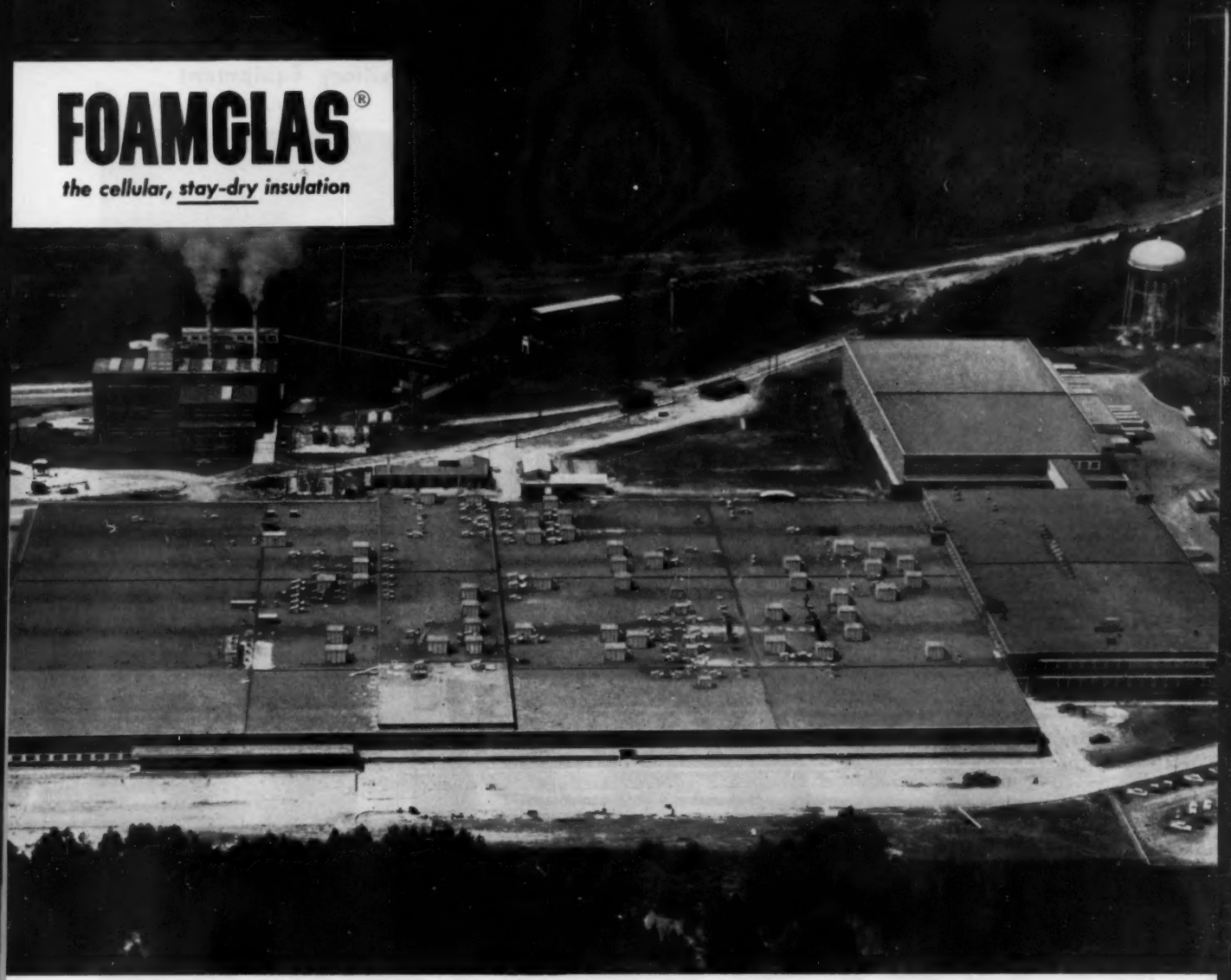
►A Trak-Rak crane, shown by Chicago Tramrail Corp., uses push-button operation to utilize the maximum space in a storage area and the least amount of aisle space. One variation of the system is being used to store warp beams weighing up to 1,500 lbs. in racks four beams high. This application doubles the storage area. Another application of the crane is in storing boxes or pallets of materials in warehouses. Handling costs are said to be cut up to 90%. **(A-36)**

►Rol-A-Lift, a combination hydraulic jack and truck for moving cartons and crated or uncrated machinery, was shown by Skarnes Engineering & Supply, Inc., Minneapolis, Minn. A model said to be particularly applicable to textile plants is made in 4,000-lb. capacity. To use the device, one jack-truck is slipped under each end of the carton. Then the jacks are raised, and the load is rolled to the desired location. **(A-37)**

►A guide wire strung along the ceiling of a building and a sniffer box attached to a small tractor are all that's necessary to provide automatic control in moving loads. The Guide-O-Matic tractor is manufactured by Barrett-Cravens Co., Northbrook, Ill. The tractor does not require an operator, and loads can be towed on attached trucks. The tractor can be operated at any desired speed and can be stopped at any point. **(A-38)**

FOAMGLAS®

the cellular, stay-dry insulation



Airview of Grace Bleachery, the world's largest . . . recently enlarged by The Springs Cotton Mills at Grace, S.C. *Engineers and Architects:* Robert & Co. Associates, Inc., Atlanta, Ga.; *Roofers:* Ingold Company, Inc., Hickory, N.C. and Arvett & Ledbetter Roofing and Heating Co., Charlotte, N.C.

On Springs Cotton Mills' 16-acre bleachery roof FOAMGLAS insulates effectively because it stays dry

On this 16-acre roof of their Grace Bleachery, The Springs Cotton Mills has found that FOAMGLAS insulates effectively because it can't absorb moisture and lose insulating efficiency.

Installed in 1947 on the original bleachery roof, FOAMGLAS has effectively kept down condensation on the roof slab and conserved heat in the winter. Seven years later it was picked again to insulate the roof of a major addition to this bleachery, the largest in the world.

This unique cellular glass insulation has been used extensively by the Springs Mills in other ways . . . on 350° steam lines . . . in cold storage spaces . . . and on 20 additional acres of mill roofs including one in Lancaster, S.C. covering more looms (7,500) than any other roof in the world.

It will pay *you* to get the full story on the use of FOAMGLAS for buildings, cold storage space, piping, or tanks and equipment. Please write today for a sample and literature indicating your specific interest.

Pittsburgh Corning Corporation

Dept. AH-75, One Gateway Center

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BENJAMIN BOOTH COMPANY, the originators of STRIP-O-MATIC card clothing, manufacturers of a complete line of quality card clothing

ANNOUNCE

SUPR-O-TAPE

THE PROVEN FABRIC

CONDENSER TAPE

NOTE THESE ADVANTAGES:

- LONG LIFE
- NO STRETCH
- HIGH STRENGTH
- NO SURFACE CRACKING
- NEEDS NO OIL
- HOLDS SQUARE EDGES INDEFINITELY
- CAN BE MADE ENDLESS IN ANY LENGTH
- LOW IN COST

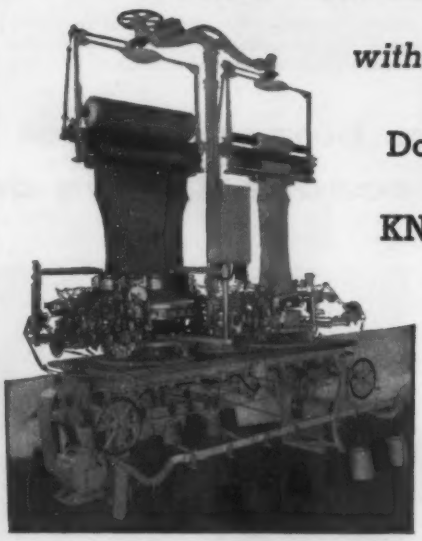
Write the Benjamin Booth Company today for full details and prices.

BENJAMIN BOOTH COMPANY,
ALLEGHENY & JANNEY STS., PHILA., PA.

Booth

ACTUAL MILL OPERATIONS SHOW

BIG WEEKLY SAVING PER OPERATOR



with installation of NEW

TOMPKINS D-2

Double Head Spring Needle

KNITTING MACHINE

New stop motions and furnishing wheels provide the profitable answer to reducing cloth imperfections and needle breakage—imperfections are caught before they get into the cloth! Actual installations are showing remarkable savings in knitting various types of material. SOME MILLS CLAIM THEY HAVE CUT PRODUCTION COSTS IN HALF . . . OTHERS REPORT SAVINGS UP TO $600.00 PER WEEK PER OPERATOR, over old machines. All this PLUS AN IMPROVEMENT IN FABRIC QUALITY!

WRITE OR PHONE FOR COMPLETE INFORMATION

LET US SHOW YOU THIS MONEY-MAKING MACHINE IN PRODUCTION

OTHER TOMPKINS MACHINES

BEEF BAG KNITTER | HOCKEY CAP KNITTER | MULTIPLE FEED KNITTER

TOMPKINS BROS. CO. • Syracuse 4, N. Y.

Auxiliary Equipment

CONTINUED FROM PAGE 93

Easy-Reading Scale

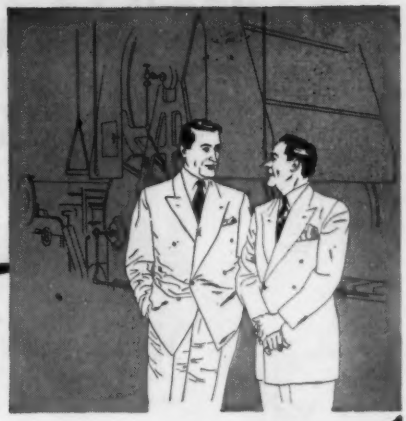
A scale designed for quick and accurate readings was shown by The Howe Scale Co., Rutland, Vt. The manufacturer says the scale figures can be read clear across the average room, or up to 15 ft. The floor scales begin at 1,200-lb. capacity and go up to 2,400 lbs. (A-39)

Printing on Conveyors

You don't need printed and labeled cartons for your product if you use the Markoprinted machine demonstrated by Adolph Gottscho, Inc., Hillside, N. J. One or more machines are attached to a conveyor, and packages are marked as they move along the conveyor. The machine marks codes, dates, varieties, sizes, colors, lot numbers, and your own trade-name; and all the marking is done automatically. (A-40)

► If you have small jobs to do in concrete, such as grouting anchor bolts into concrete floors, a premixed grout demonstrated by The Master Builder Co., Cleveland, Ohio, may do

the weaver's friend



A KEESTAR KEE PRODUCT

VICTOR Mill Starch

because it's always uniform
and backed by Keever service

Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
1200 S. C. NATIONAL BANK BLDG.
GREENVILLE, SOUTH CAROLINA

THE KEEVER STARCH CO. ★ GENERAL OFFICES ★ COLUMBUS 15, OHIO

Processors of corn, wheat and blended starches for industry since 1898

 For more information, write direct or use Reader-Service post card.

a durable finish with Penford gums!

U.S. Patent Nos. 2,516,632; 2,516,633; 2,516,634

for permanent finishing, use these new starch ethers with resins

on

- sport denims!
- ginghams!
- sail cloth!
- and a *host* of other fabrics!

PENFORD FINISHING GUMS*—highly chemically substituted starch ethers—in combination with urea formaldehyde and melamine resins—provide *lasting* results!

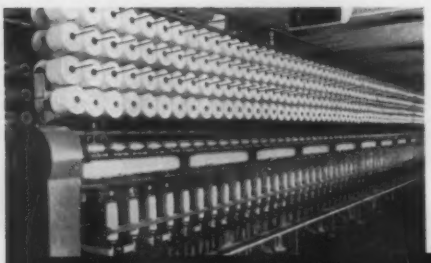
Get

- a *permanent* hand!
- *lasting* crush-resistance and dimensional stabilization!
- higher breaking strength and abrasion resistance!

Technical Sales Service Engineers from PENICK & FORD are available to work with you to develop PENFORD FINISHING GUMS formulations to supply the specific permanent finishes you desire for your fabrics. Write, wire, or phone for prompt service. PENICK & FORD, LTD., Incorporated, 420 Lexington Avenue, New York 17, N. Y., 806 Bona Allen Building, Atlanta, Georgia; Cedar Rapids, Iowa.

Send for helpful new brochure!

Penford Gums



Tops for Cotton Tire Cord Paper

COLLINS Big Ring Twisters =

Collins Big Ring Twisters produce 4 to 12 lb. packages of exceptionally clean knotless yarns, when employing a 6 to 8 in. ring size.

High Speeds are possible because Collins Big Ring Twisters are equipped with large diameter pulleys, anti-friction idlers, ball bearing front roller stands, large diameter feed rolls, and roller bearing spindles.

Low Cost is achieved through increased twisting and winding efficiency. *Quality* is inherent in big packages of knotless yarns. Write for full information on Collins Big Ring Twisters and Collins convenient financing plan.

Big Packages Clean Knotless Yarn at Higher Speed ...Low Cost

COLLINS BROTHERS MACHINE COMPANY
647 Roosevelt Ave., Pawtucket, R. I., Est. 1866
CHARLOTTE • CHICAGO • TORONTO

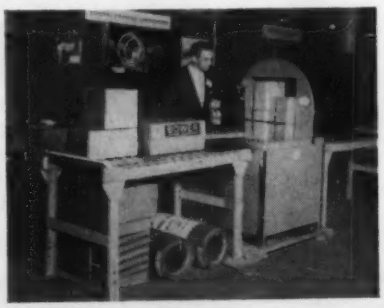
There is a Collins Twister for Every Ply Yarn Construction

your job. The product is said to be nonshrinking and to have high compressive strength. It's also oil- and water-resistant. To use the product, simply mix it with water as it comes from the container and apply it. (A-41)

►An easy-to-use material to patch concrete floors was shown by The Master Builders Co., Cleveland, Ohio. Only water has to be added to the material, and then it's ready to be used. The premixed mortar will not shrink, the maker says. It's also oil- and water-resistant. The material hardens quickly when it's applied to floors, and the floor is ready to be used within 3 hrs. The hardening process can be speeded further by using warm water. (A-42)

Rubber-Tired Casters

Casters built with a section easily removed to be replaced with new rubber tires were shown by The Wellington Machine Co., Wellington, Ohio. The rim and tire are easily changed in a few minutes with a wrench. The tire is guaranteed not to get loose, stretch, or roll off. Thread guards are furnished for textile applications. (A-43)



Spot-Welding Strapping

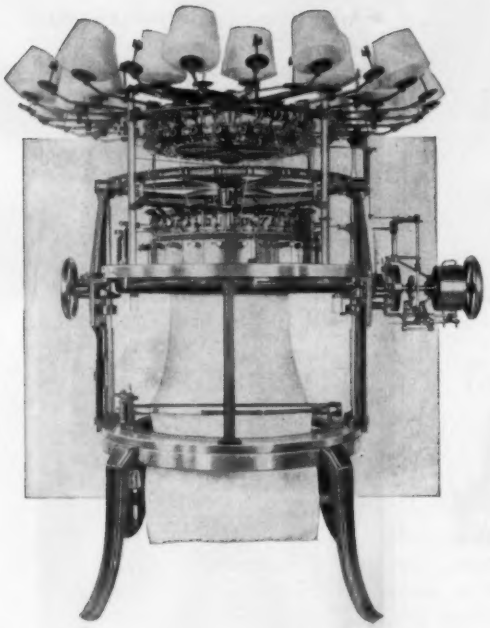
Auto-Band, a strapping machine shown by General Strapping Corp.,

ORLON "Goes to Town"

when produced on a

WILDMAN

INTERLOCK



Wildman Interlock Machines are completely assembled and adjusted at the factory, and can quickly be set up and running in your mill without calling on erecting mechanics.

Orlon and other synthetics — by themselves or in combination with natural fibers — are knit to look their best on this highly versatile and productive machine. The increasing demand for more and more varieties of knit sweaters, sport shirts, gloves, underwear and dress fabrics will keep your Wildman Interlocking Machines profitably busy for years to come — especially when you compare their output with production and operating costs!

Available in all popular sizes from 10″ to 30″ and furnished in all cuts — 10 to 24 needles per inch. Belt or individual motor drive. Inquire today for complete information.

WILDMAN *makes the machines that tend to their own knitting.*

WILDMAN MFG. COMPANY, NORRISTOWN, PA.

Manufacturers of: FULL FASHIONED HOSIERY MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS; STOP MOTIONS

what they do means a lot to you

when buying coolers!

Testing . . . testing . . . testing . . . that's the secret of the longer life and trouble-free operation you can expect from a Halsey Taylor Electric Cooler.

Here you see men testing, hour after hour, for capacity, for leakage, for accuracy of temperature and refrigerant controls, for correct setting of expansion valves . . . *for every factor that can mean the difference between dependability and uncertainty!*

That's why the Halsey Taylor nameplate is your guide to performance, no matter what type of cooler or fountain you buy!

HALSEY TAYLOR

THE HALSEY W. TAYLOR CO., WARREN, OHIO

TW-12

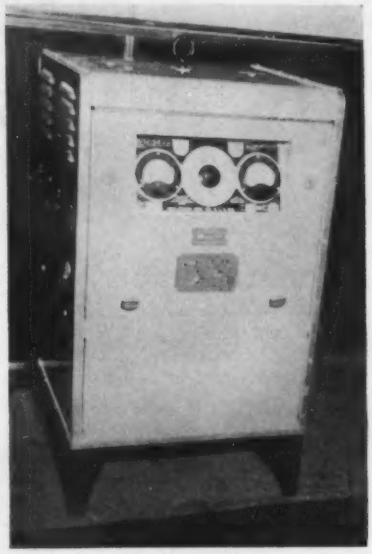
A copy of this quick-reading, 8-page booklet is yours for the asking. It contains many facts on the benefits derived from your business paper and tips on how to read more profitably. Write for the "WHY and HOW booklet."

McGraw-Hill Publishing Company, Room 2710, 330 West 42nd St., New York 36, N. Y.

Auxiliary Equipment Continued

New York, N. Y., fastens the bands together by double spot-welding them. An operator presses a button and starts the strapping cycle. The machine wraps the strap around the package, tensions the strap, seals it with a spot-weld, and cuts off the band. Then the machine is ready for the next strapping cycle.

The machine is made in two sizes. The standard-size machine straps packages as small as 9x3 ins. and as large as 40x28 ins. The large machine also straps packages as small as 9x3 ins. and, in addition, straps them as large as 51x54¼ ins. **(A-44)**



Battery Charger

Precision control and accurate voltammeter readings are said to be possible with a battery charger demonstrated by Berg-Gibson Mfg. Co., Kansas City, Mo. The instruments come in several sizes and models and range in price from $228 to $860.

All models are designed to give the proper charging characteristics for both lead-acid and nickel-iron batteries To change from one battery to the other, a toggle switch is thrown. **(A-45)**

► Truck dispatching by radio is said by the manufacturer, Motorola, Inc., Chicago, Ill., to be practical where as few as two fork trucks and one stake truck are used. When a truck is needed for a particular job, the

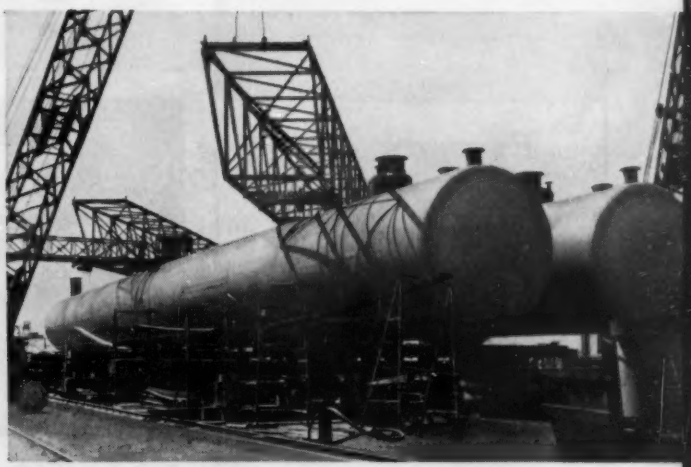
THIS BIG SPLASH IS MAKING CHEMICAL HISTORY

Here's the newest of a long list of Columbia-Southern achievements in the transportation and handling of industrial chemicals. The launching, pictured at New Orleans, is of one of Columbia-Southern's new fleet of advanced-design caustic soda barges.

The development of the industry's most advanced barge fleet is a natural outgrowth of Columbia-Southern's pioneering research and development in transporting liquid caustic soda by both rail and water. Distinctive features of this new fleet include newly designed electric pumps that speed and simplify unloading; Pittsburgh Fiber Glass insulation and the most modern steaming facilities; Columbia special tank lining and nickel pump fittings to prevent metallic contamination of the caustic; complete safety construction and equipment.

Setting the pace in chemical transportation is one of many contributions to the chemical industry by Columbia-Southern, a leading producer of chlorine, alkalies and related chemicals.

On Columbia-Southern's new barges, one end is sharply raked, while the other is flat. This permits far greater maneuverability. Also, more barges can be moved faster with the same towboat power.



These barges are equipped with two caustic soda cargo tanks, each of 600 ton capacity, especially mounted and insulated to facilitate unloading.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION

SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY

ONE GATEWAY CENTER • PITTSBURGH 22 • PENNSYLVANIA

CHLORINE, ALKALIES AND RELATED CHEMICALS • OFFICES IN PRINCIPAL CITIES

NO PLANT GROWTH

WHEN YOU USE
DOLGE
SS WEED-KILLER

For areas where you want ALL unsightly, fire-inviting weeds and grasses eliminated, such as railroad sidings, along fences and abutments, parking lots, drives and walks. An economical solution of SS Weed-Killer kills plants and seeds on contact, then works down through the soil, killing roots and sterilizing surrounding earth — affording freedom from weeds for as much as an entire year!

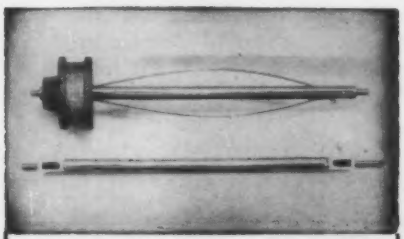
And . . . for keeping lawn areas, seeded traffic islands and other improved areas free from noxious weeds, use E.W.T. *SELECTIVE* WEED-KILLER. Non-injurious to most grasses.

Scientific chemical weed control literature on request.

FOR FREE SANITARY SURVEY OF YOUR PREMISES SEE YOUR DOLGE SERVICE MAN

dependable DOLGE

WESTPORT, CONNECTICUT



Renewable Tips Give You New Top Bobbin Spindles for No. 90 Machines

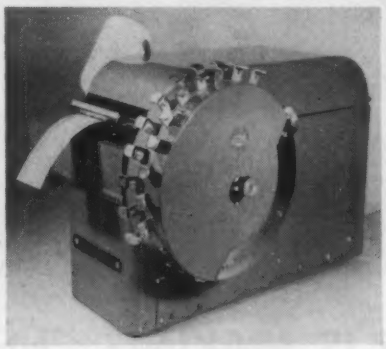
Wayne Spindles, with patented, renewable, tool-steel tips cost little more than solid end spindles. Worn tips can be quickly replaced for a few cents, and spindles are then good as new. Send for sample—see how to save time and money.

WAYNE Mfg. Co.

HONESDALE, PA.

Auxiliary Equipment Continued

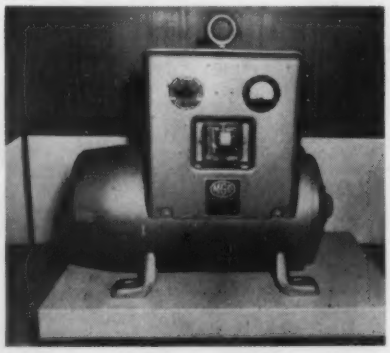
dispatcher presses his microphone button to contact the truck he wants. By contacting all trucks, the dispatcher can put the one nearest the job to be done in service. The manufacturer estimates the radio is as effective as doubling the number of trucks used. (A-46)



Electric Tape Dispenser

An electric gummed-tape dispenser that gives out tape in predetermined lengths of 3 to 100 ins. was shown in action by Ideal Stencil Machine Co., Belleville, Ill.

At a touch of your finger, the machine measures, moistens, delivers, and cuts tape ready for instant sealing. The machine handles tape from 1 to 4 ins. wide. It weighs 70 lbs. and is 20 ins. long, 12 ins. wide, and 12 ins. high. (A-47)



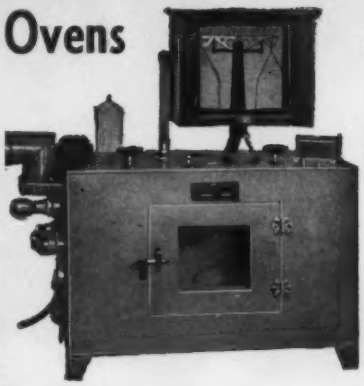
Automatic Battery Charger

Set it and forget it; that's the way Motor Generator Corp., Tray, Ohio, says to use its battery charger to recharge batteries for fork trucks. The charger shuts off automatically when the charging cycle is completed.

To use the charger, you first connect the charging plug into the re-

CONTINUED ON PAGE 204

Textile Testing Ovens



For *accurate* testing of water content in yarn. The 8-basket oven, with 3" x 4" baskets, may be changed to 6 baskets, 4¼ x 4¼" both 6" deep. Occupies table space 20" x 40".

EMERSON Ovens

Are built in different types to handle wool, cotton and silk. Baskets are designed specially for each class of work. Write for details on EMERSON OVENS to fit your process.

EMERSON APPARATUS CO.

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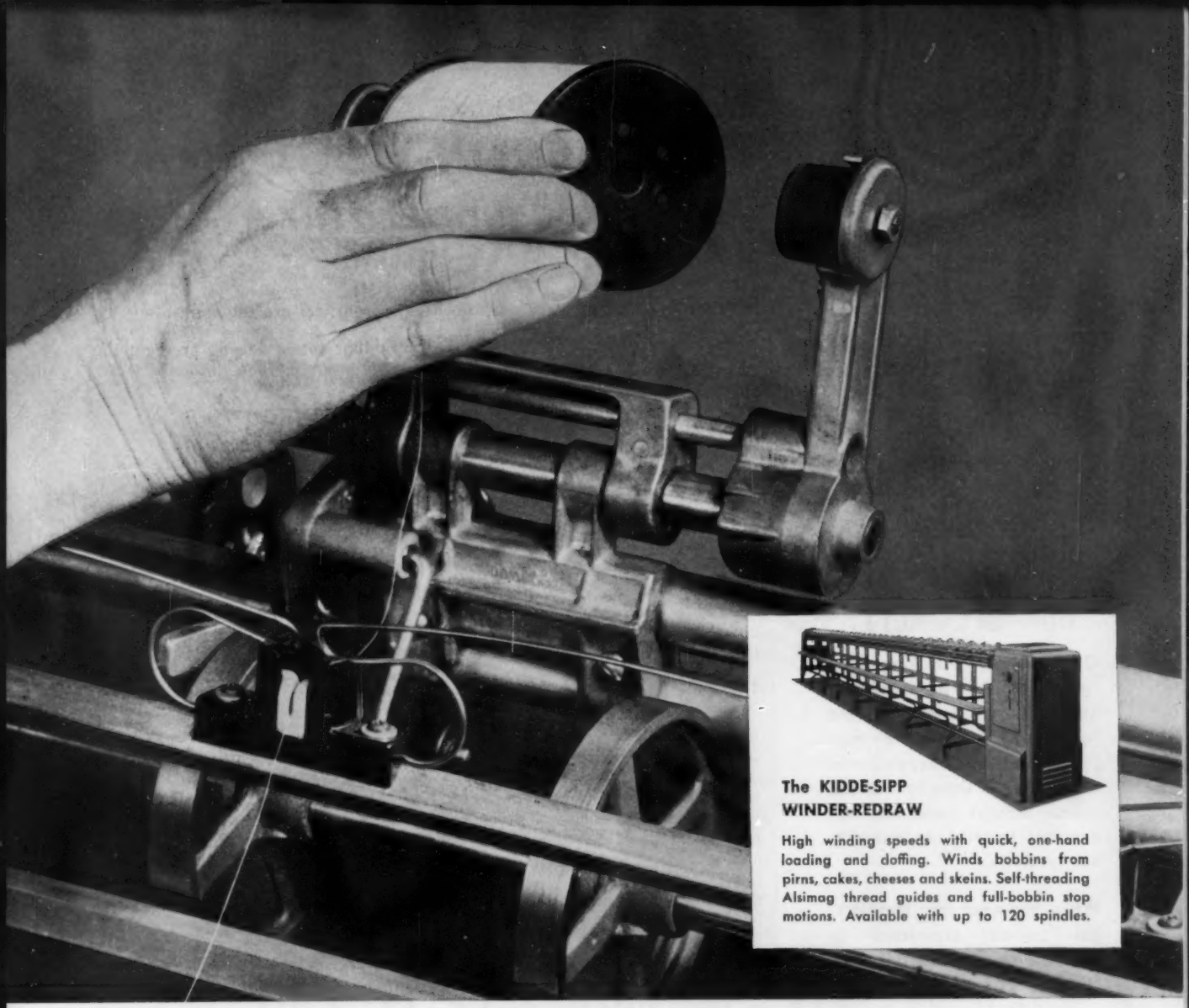


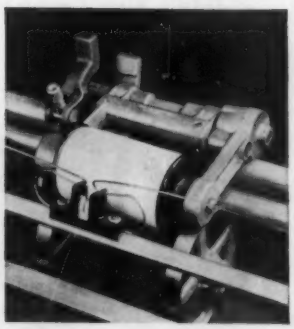
The KIDDE-SIPP WINDER-REDRAW

High winding speeds with quick, one-hand loading and doffing. Winds bobbins from pirns, cakes, cheeses and skeins. Self-threading Alsimag thread guides and full-bobbin stop motions. Available with up to 120 spindles.

One hand does it... without touching the yarn!

The high running speed of a KIDDE-Sipp winder-redraw machine is only one of the reasons why it's a top producer of even, smooth bobbins. As you can see, the operator can doff a full bobbin in a split-second... with a flip of the hand. And her fingers never even touch the yarn!

Equally important, this winder has self-threading guides and is equipped with full-spool stop motions. These advantages, combined with one-hand loading and one-hand doffing add up to this . . . with the KIDDE-Sipp winder one operator can tend more spindles and turn out more bobbins than with other machines. Write us today for complete information.



No oil spots on the yarn! Spool driving heads and friction wheels have oil-sealed bearings. Traverse rods operate on nylon rollers . . . no lubrication is required.

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BEAMERS • CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS

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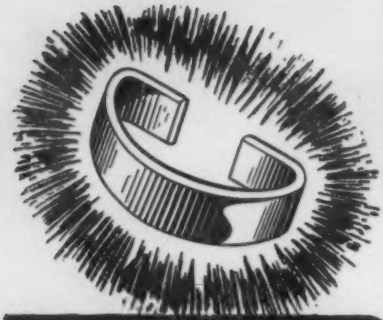

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CRAWFORD "JACK" RHYMER, BOX 2261, GREENVILLE, S.C.

Dye DACRON-WOOL Blends At High Temperature

- **When elevated temperatures are used, no carriers are required**
- **Experimental work on fabrics has shown that formaldehyde protects the wool from damage at high temperatures**
- **The method appears to be applicable to yarn and stock dyeing**

DYEING DACRON at elevated temperatures produces higher-quality work at reduced cost over conventional methods at atmospheric pressures.

With Dacron-wool blends, however, high temperatures have heretofore been impractical because the wool is severely degraded at 250° F.

Formaldehyde Protects Wool

Experimental work in the Barotor on piece goods has shown that a small amount of formaldehyde added to the dyebath protects the wool and retains the soft, full hand.

The maximum degree of protection is obtained at pH 4.0 to 5.5, although appreciable protection is obtained as low as pH 2.0 or as high as pH 7.0. Color values are increased, and there is less staining of the wool component where formalin is used. What staining there is, is on tone. Material and time savings in dyeing at 250° F. are very attractive economically.

How Wool Is Affected

Wool fabrics treated in plain water at 250° F. lose about one-half their strength as measured on the Mullen burst-test device. The loss is more severe when sulfuric acid is added to the bath.

When formalin is included in the bath, this severe degradation is avoided, the characteristic hand of the fabric is retained, and shrinkage is reduced.

The Mullen test results correlate well with other measures of yarn and fabric strength such as ravel strip tear, tongue tear, Stoll abrasion, and yarn tenacity and elongation tests.

Dacron-wool-blend fabrics did not show as great a strength loss after treatment at 250° F. as did all-wool fabrics, probably because the Dacron component bore most of the load.

How Dyeing Is Done

Trials of both large and small lots in the Barotor have been made by both one-bath and two-bath methods.

In the one-bath method the process is:

1. Fabric is loaded with correct loading slack.
2. Added to the bath at 120° F. are:
   (a) Dacron and wool colors dispersed in water and a dispersing agent
   (b) Nonionic detergent (0.5 to 1.0%)
   (c) 3% of 70% glycolic acid (hydroxyacetic acid) to pH of 4.0
3. The bath is heated to 212° F. with the vent open, and 3 gpl. of 37% formaldehyde is added.
4. The bath is heated to 250° F. and the dyeing carried out for 1½ hrs. The shade is matched during this period.
5. The bath is dropped and the fabric rinsed and scoured. When a navy shade based on Latyl Violet BV is dyed, a solvent scour may be necessary to improve the solvent bleeding fastness. This scour is done with 1% on bath volume of the following self-emulsifying mixture, at 180° F. for 15 mins.:

   90 parts Varsol
   5 parts Energetic S
   5 parts Duponol RA

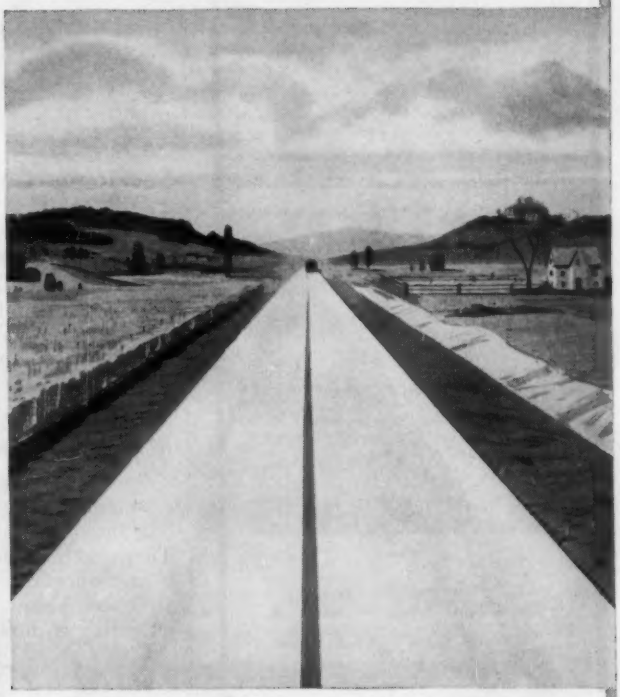
6. The fabric is rescoured with 0.5% Energetic S for 15 mins. at 160° F., rinsed clear, and unloaded.

In the two-bath process, the Dacron is dyed first at 250° F. The formaldehyde is added at 212° F. and the vent closed to prevent escape of the volatile formaldehyde. The wool is later dyed in a fresh bath at the boil with neutral and strong acid wool colors.

From Preliminary Bulletin CSB-D-38, Textile Fibers Dept., E. I. du Pont de Nemours & Co., Inc.

DOW

...almost out of sight already...



YOUR CAUSTIC ORDER'S ON ITS WAY FROM DOW

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DOW

What mill people say ABOUT ALLEN SOCKET SCREWS

"We use them right along—even more uses could be found for them if mill men realized their safety."

—Superintendent
Spinning Dept.
(Tennessee Mill)
(name on request)

ALLEN
MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.

Servicing Gears for Cheap Operation

The engineer who designs a set of gears determines the proper physical dimensions necessary to drive the load. The gear manufacturer makes the gears to the designer's requirements. And the customer who uses the gears must also do his part for economical operation of the gears.

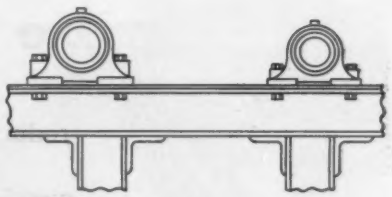


Fig. 2

Mount Gears Right

Spur gears should be mounted on a foundation rigid enough to maintain the original settings of the gears. These settings must be maintained even under the most-extreme operating conditions. The best type of mounting is shown in Fig. 1. A steel

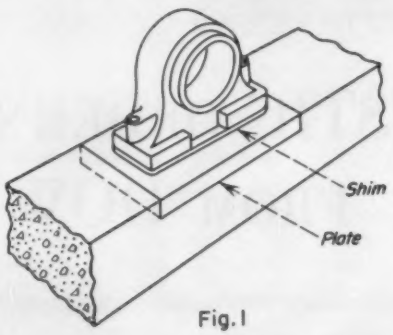


Fig. 1

or cast-iron plate, machined on one side, is grouted in a reinforced-concrete foundation with the machined side up.

Structural-steel foundations are also satisfactory when they're properly designed and constructed (Fig. 2). When gears are mounted on structural steel, better operating conditions are obtained by placing the gear bearings as close as possible to the supporting columns, as shown in Fig. 2.

The bearings should be mounted on beams with a minimum flange thickness equal to the thickness of the bearing pedestal or pillow block, whichever is used.

Fit Gears Correctly

When a set of gears is installed, the gear bore should be a tight fit on the shaft. Loose-fitted bores let the gears wobble and make unnecessary noise. The gear shafts and pinion shafts should be placed at the proper center distance and parallel with each other both horizontally and vertically. The proper center distance of the two shafts is equal to the sum of the pitch radius of the gear and its mating pinion.

When a gear is fitted to a shaft, a key is usually used to lock them together. If there's an appreciable amount of lost motion between the gear and the shaft, as shown in Fig. 3,

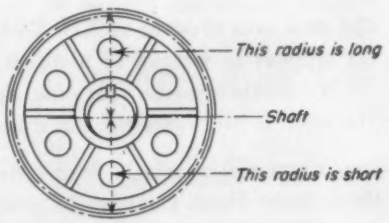


Fig. 3

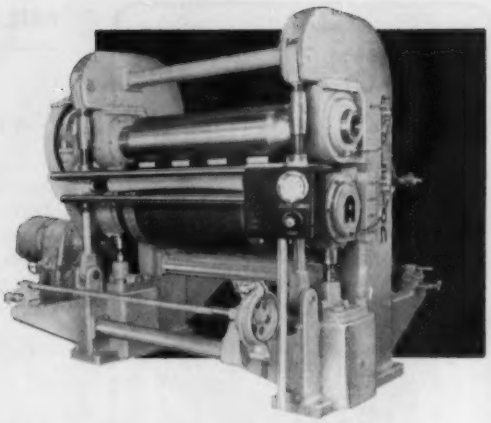
the gear will run off center. This condition will result in noisy operation, broken teeth, and a serious reduction in the life of the gears.

CONTINUED ON PAGE 204

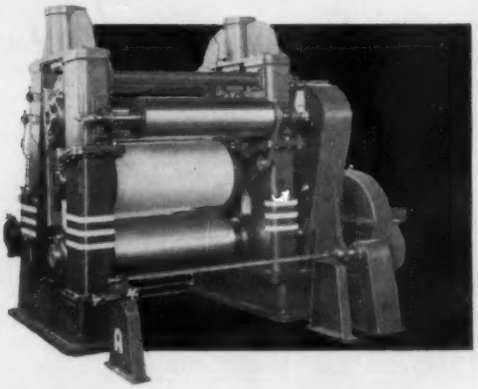
3 efficiency experts

at Everglaze Finishing

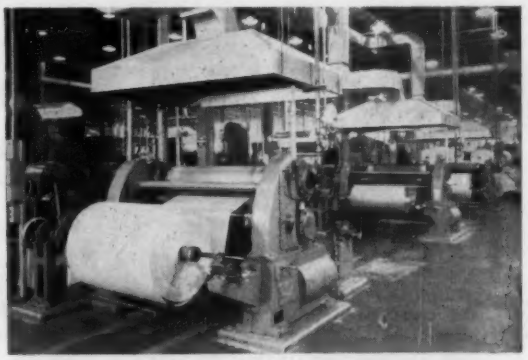
Apply increased production and less maintenance to your everglaze operation with new Appleton Machine efficiency . . . that puts you ahead of competition . . . that protects your profits now and for years to come. Here are 3 ways to do it:



1 An Appleton 2-roll, 50-ton Hydraulic Schreiner Calender gives goods a beautiful lustre at 40 yards a minute, 25% faster than most machines in use.



2 The Appleton 3-roll, 50-ton Hydraulic Friction Calender irons the finest everglaze finish at 40 yards a minute, increasing output by 25%.



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Acceptance Assured: the invisible stamp of approval on every yard of everglaze finished goods that runs through modern, money-saving Appleton Machines. An Appleton man is as close to you as your telephone. Why not call 3-7361, or wire, collect at absolutely no obligation, today.

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MILL MAINTENANCE

CONTINUED FROM PAGE 202

Align Gears Exactly

If shafts are not mounted parallel horizontally, tooth wear occurs, as shown in Fig. 4. Nonuniform bearing clearances also cause this same kind of wear.

But when a set of gears is aligned properly, the teeth contact correctly, as shown in Fig. 5.

To align a set of gears correctly, put the mating gears on their shafts and place them in their bearings. Coat one gear with a thin coat of Prussian blue, red lead, or copper sulphate. Then put enough load on one gear to cause its mating gear to assume its operating position. Rotate the gears until the coating material is transferred to the other gear. If the gears are aligned correctly, the transferred coating will show on 80% of the face width of the uncoated gear. *Westinghouse Electric Corp.*

Auxiliary Equipment

CONTINUED FROM PAGE 198

ceptacle on the battery; then you set the pointer on the charge-control unit to the normal-charge position. The battery will be charged in about 3 to 3½ hrs. **(A-48)**

► A magnesium dock board so light it can be easily handled by one man was shown by Mag Line, Inc., Pincolling, Mich. Two models were shown: one that will support 1,000 lbs. per truck axle, and one that will support 2,000 lbs. per axle. Trucks can back to within 3 ins. of the dock. One end of the board is elevated to fit trucks lower than the dock; but if the truck is higher than the dock, you simply turn the dock around. **(A-49)**

► A rugged all-steel welded-constructed ramp was shown by Elizabeth Iron Works, Inc., Elizabeth, N. J. It's made to be transported to and from the desired locations by fork-lift trucks. The dock locks securely to span any gap from 5 ins. to 58 ins. A self-leveling floating-arm locking device makes adjusting the ramp for different heights easy. It also secures the ramp in any position. **(A-50)**

News Briefs

► First results of the research program sponsored by the Underwear Institute were revealed at the Institute's 89th annual meeting at Atlantic City. Work done by Graduate Fellow Roger L. Pruitt at N. C. State College shows that, while all resins give some protection against shrinkage, there is no one resin that is outstanding. Further work is in progress.

► The Burlington Industries Foundation has announced a broad four-phase program of financial aid to education. The program represents an estimated first-year expenditure of $100,000 on the part of Burlington Industries, with the amount increasing in succeeding years. The program combines aid to educational institutions and assistance to worthy students in equal shares.

► John Heathcoat & Co. Ltd., England, has developed a process for rendering nylon net flare-free. The net is said to recede from the flame and disintegrate before the fire can catch and travel.

► "This is the time to raise the minimum wage from 75¢ to a figure substantially above the 90¢ asked by the President," Seymour E. Harris, chairman, New England Governors' Textile Committee, recently told the U. S. Senate Labor and Welfare Committee.

Mr. Harris supported his position on the ground that the rise of wages since 1949 and probable future increases, including marked gains in fringe benefits, make the 75¢ level outmoded.

Testing yarns in Greenville laboratory, Corn Products Refining Company

An analytical step in performance tests of a sizing formula

HOW CAN THIS MODERN LABORATORY SERVE YOU?

Primarily devoted to the evaluation and perfection of starch products for warp sizing, Corn Products Refining Company's field laboratory at Greenville, South Carolina now serves multiple purposes. The laboratory is centrally located and serves the textile industry in numerous capacities. Among the projects in force in this up-to-date laboratory are these:

- **Conducting performance tests of various sizing formulas.**
- **Conducting check-tests on size content of yarn produced in a large number of textile mills.**
- **Perfecting size formulas for use under specific conditions.**

A close liaison between the laboratory and the company's field experts helps evaluate and solve mill production problems more speedily and effectively. This technical service is offered without cost or obligation to the industry. Inquiries or requests should be sent to:
Corn Products Refining Co., 17 Battery Place, N. Y. 4, N. Y.

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METALLIC YARNS

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THROWN YARNS

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CONTINUED FROM PAGE 134

Knitted-Outerwear Press

The Paris sweater finisher, built by Garment Finishing Equipment Corp., 18 Brattle Street, Cambridge, Mass., doubles the production obtained from conventional buck pressing. An unskilled person learns to operate the machine in a few minutes.

The garment is placed over an expanding nylon form. Steam is applied uniformly to the garment except at the neck and waist ribbing, where it is restrained or checked. Heated air then drys the garment while the finish is set.

The forms are custom-tailored for the correct steam pressure for different styles. The only manual adjustment is a lever to correspond to a given size. **(T-20)**

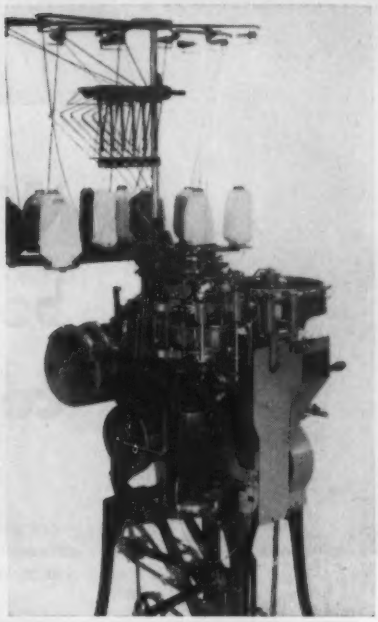
Loom Picker-Stick Bunter

A sponge-leather picker-stick bunter is being made for Crompton & Knowles drop-box looms by Garland Mfg. Co., Saco, Me.

The bunters are available in three sizes for pickers with picker-rod diameters of $\frac{7}{16}$, $\frac{1}{2}$, and $\frac{5}{8}$ in. The units are sold by the pound, and each unit weighs approximately $\frac{1}{2}$ lb.

Washers of the same material are available to keep the bunters at the required length at the loom.

The manufacturer says the bunters have been pretested on looms in production and have proved durable and economical. **(T-21)**



Argyle Knitting Attachment

Solid-color argyle socks can now be made on Spiral HH and PW machines with attachments from H. E. Crawford Co., Inc., Kernersville, N. C. The attachments can be fitted in the mill to $3\frac{3}{4}$-, $3\frac{1}{2}$-, and $3\frac{1}{4}$-in. machines.

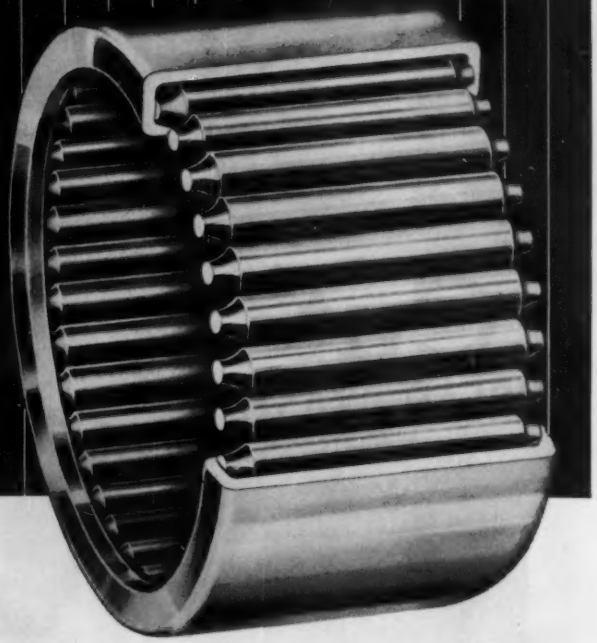
Top and bottom auxiliary pattern drums are added. Each drum is independently operated by a 136-rack pin drum. The top pattern drum controls the needle-cylinder cams and an eight-point clutch, which determines the needles or needle to take the pattern yarn.

The machines run at 200 rpm. except when they make the pattern changes. A 120-needle machine with the attachment produces 2.8 doz. pairs of argyle socks each 8 hr. shift. **(T-22)**

Full-View Lift Truck

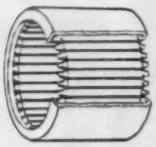
A lift truck designed to give the driver full vision is announced by

here's why...

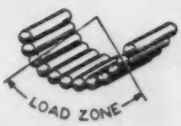


TORRINGTON

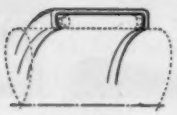
DC needle bearings give high-capacity performance in minimum space



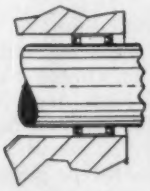
Unique construction—accurately drawn, surface-hardened shell retains rollers and serves as outer raceway.



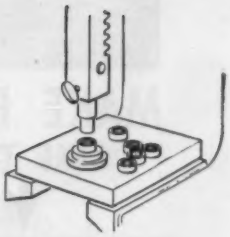
Full complement of small diameter rollers—precision-ground and through-hardened—assures top capacity by distributing load over large number of contacts.



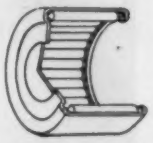
Turned-in lips of the case-hardened outer shell keep dirt and grit out, lubricants in—while retaining trunnion ends of rollers. All wear surfaces of outer race are case-hardened.



No inner race required on surface-hardened shafts—reduces space requirements, lowers unit costs.



Simple assembly—arbor press seats bearing in round housing bore. No collars, shoulders or retaining rings needed.



Closed end type DC Needle Bearings are available for stub shaft applications. The closed end provides a perfect seal at no extra cost.

Needle Bearings are made in a Precision Series for most applications and an Extra Precision Series where low radial play and minimum eccentricity are required. Easy lubrication through optional hole in shell or through hole in shaft assures long service life. Bearings can be pre-packed with suitable grease for those applications requiring grease lubrication.

See our new Needle Bearing Catalog in the 1955 Sweet's Product Design File—or write direct for Catalog No. 55.

THE TORRINGTON COMPANY
Torrington, Conn. **South Bend 21, Ind.**

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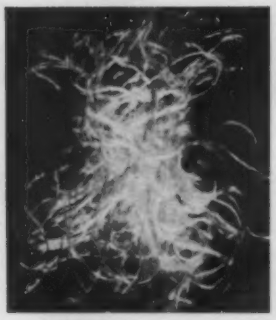
TORRINGTON NEEDLE BEARINGS

Needle • Spherical Roller • Tapered Roller • Cylindrical Roller • Ball • Needle Rollers

Cut
THREAD WASTE
LIKE THIS



MAKE FIBRE
LIKE THIS

With a Taylor-Stiles thread waste cutter you can cut all kinds of tangled and mixed length thread waste, and after opening the cut yarn you will have a fine fibre for further processing.

Write for illustrated folder showing Taylor-Stiles thread waste cutters and describing the principles on which they operate.

TAYLOR-STILES
& Company
15 Bridge Street Riegelsville, N. J.

Hyster Co., Box 4318, Portland 8, Ore. The truck, Monomast, has only one upright projection in front of the driver; and it consists of two box-type sections, with one telescoping within the other.

The fork of the new truck is said to work faster than conventional units. Additional operating advantages are: (1) faster maneuverability, (2) faster approach, (3) more-accurate load placing, and (4) safer load handling. For example, the load-raising speed is 58 ft. per min. (T-23)

Quill Take-up Truck

A quill take-up truck has been designed by Fisher Mfg. Co., Hartwell, Ga., to work in alleys no wider than 12 ins. The unit has streamlined rub bands and is equipped with guards to prevent damage to loom parts.

The flared top prevents quills from spilling while the truck is loaded. A built-in dumping arrangement facilitates handling by the operator. This truck dumps its load into large boxes or bins for later removal to the quill stripper. Easy operation reduces the operator's walking time.

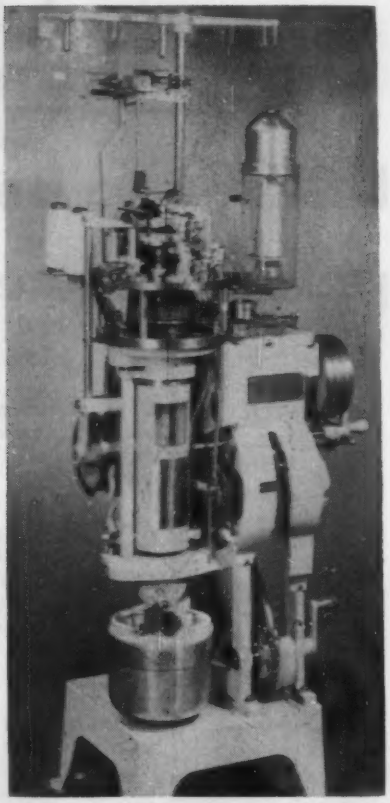
The quill take-up truck is built to suit the individual textile plant and can be modified for specific requirements. (T-24)

Chevron Mesh Attachment

An attachment to make spiral tuck patterns that can be fitted to Model K machines with picot cams is made by B. Toone Ltd., Newdigate St., Nottingham, England. The attachment, which can be fitted in 4 hrs., does not reduce the speed or interfere with other attachments.

The attachment is operated by a positive lever mechanism that operates the picot section of the cam system and the selector wheel. The selector wheel allows some needles to clear while those needles designed to tuck pass through the selector wheel with the stitch on the latch.

The ratio of the number of teeth on the wheel to the number of needles in the cylinder determines the spiral effect of the tuck stitch. The cylinder gains one needle over the selector wheel each revolution of the cylinder. Different effects such as 3x1, 6x1, and 5x2 are possible. (T-25)

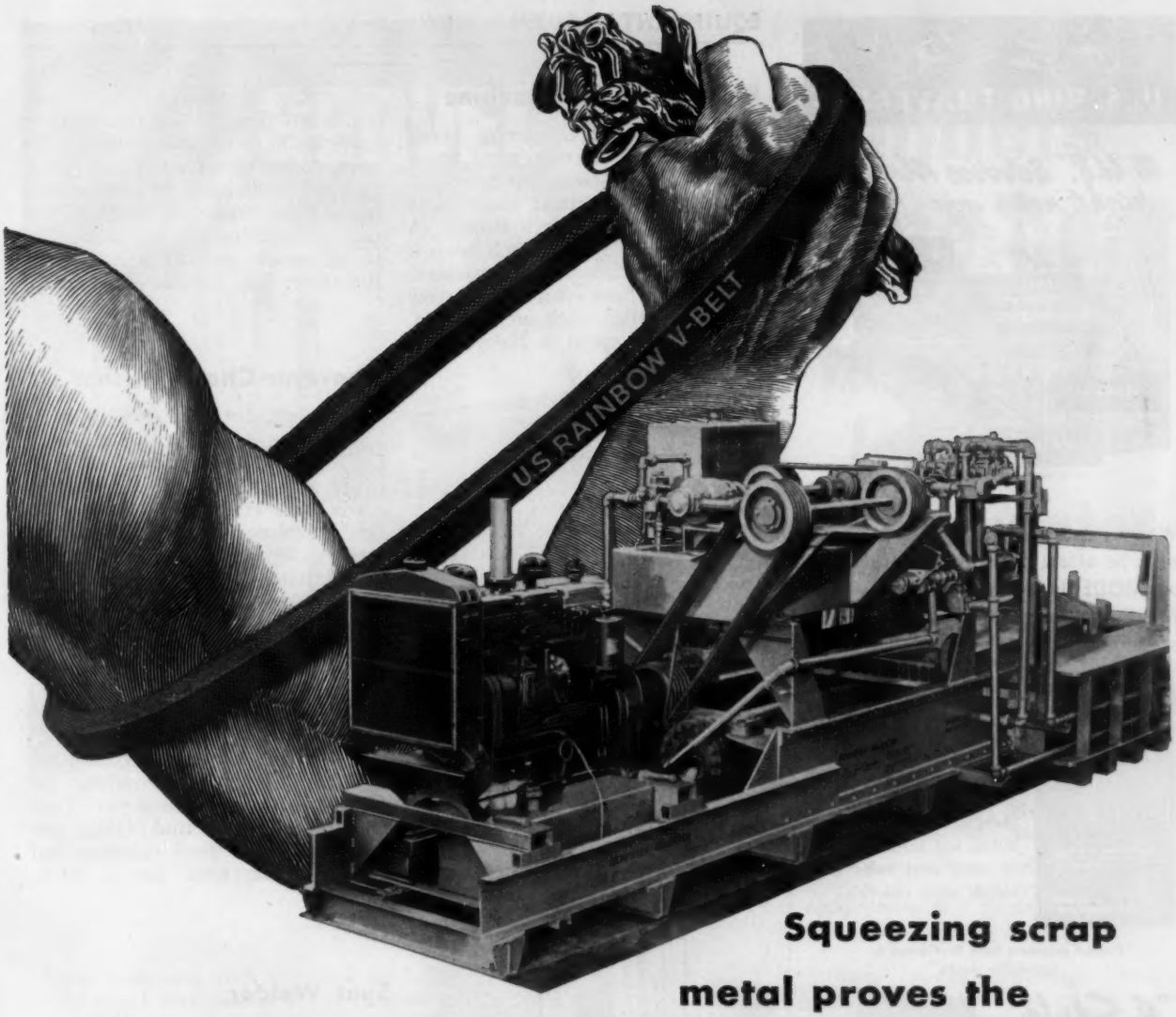


Two-Feed Hosiery Machine

A fine-gauge seamless-hosiery machine capable of producing stretch stockings is built for United States Hosiery Corp., 350 Fifth Ave., New York 1, N. Y. The machine has a 3¾-in. cylinder with 420 needles.

The machine knits K-type inturned welts and is built by Harold Chell & Co. Ltd., Leicester, England. The micro-mesh attachment takes only a few seconds to put into position. A drawing-off mechanism helps to knit a clearer stitch. (T-26)

CONTINUED ON PAGE 210



Squeezing scrap metal proves the "MUSCLE TOUGHNESS" OF U. S. RAINBOW V-BELTS

Many scrap metal dealers use the Dempster-Balester to bale sheet metal into easy-to-handle units. The tremendous power of the machine puts terrific shock loads on V-Belts —U. S. Rainbow® V-Belts. These muscular belts stand up under this treatment because they each have the unique Equa-Tensil Cord Section, a scientifically developed "U. S." construction that brings together in a balanced unit the concentrated strength of multiple pulling cords, distributes the load so evenly among the cords that each carries its full share of the load.

U. S. Rainbow V-Belts have greater gripping power, without slippage, because the straight sidewalls grip the grooves the full height of the belt. Every ounce of excess stretch is worked out mechanically before leaving the factory, yet the belt remains elastic enough to stand heavy shock loads.

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O. B. Land
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L. H. Meller, Jr.
Mid-Atlantic States, 123 Treaty Rd.
Drexel Hill, Pa.—Phone Hilltop 6-1563

H. R. Fisher
Concord, N. C.—Box 83—Phone 2-8930

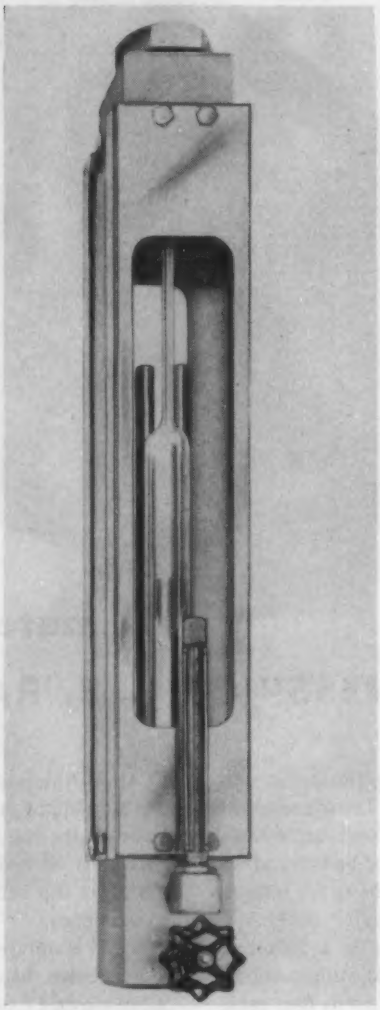
H. J. Smith
Providence—Box 1187—Gaspee 0-0100

Railway Sewing Machine

Birch Bros. Inc., Somerville, Mass., has announced a center-wind beaming and railway sewing machine.

Features are constant cloth speed and nearly constant cloth tension. A choice of butt- or chain-stitch heads is offered on the railway sewing machine.

Automatic head return and a scray to hold unrolled cloth are provided. The operating speed is 200 yds. per min. (T-27)



Specific-Gravity Indicator

The Spee/Gee is an instrument designed to be mounted in continuous-flow systems where a constant check on the specific gravity of liquids in the system is necessary. In operation, the liquid enters the bottom of the instrument through a ¼-in. connection controlled by a needle valve, and temperature is noted by a built-in thermometer.

A Pyrex-glass tube containing the hydrometer is filled by the liquid, which overflows into metal overflow tubes and is discharged just above the inlet. A lug blown into the hygrometer body rests in guides that prevent rotation and insure easy reading at all times. The instrument can be supplied in all metals and alloys by Brooks Rotameter Co., Lansdale, Pa. (T-28)

Conveyor-Chain Brusher

Dust and dirt that stick to lubricating oil on overhead conveyor chains can be automatically cleaned off by a conveyor-chain brusher built by Fuller Brush Co., Hartford 2, Conn. The unit is mounted on the monorail that supports the chain conveyor; and the two brushes, powered by a 1-hp. motor, pivot on the motor base and bear against the conveyor chain. (T-29)

Fluid-Drive Fork Trucks

A fork-lift-truck transmission of the torque converter type, available for lift trucks manufactured by Towmotor Corp., Cleveland, Ohio, permits fast, smooth truck operation and eliminates the need for a clutch. (T-30)

Spot Welder

A manual sigma spot-welding process that makes spot, plug, and tack welds with reinforcing filler metal has been introduced by Linde & Alloys Dept., Union Carbide & Carbon Corp., 30 E. 42nd St., New York 17, N. Y. The process makes extra-strong welds in heavy metals with access to only one side of the weld joint. (T-31)

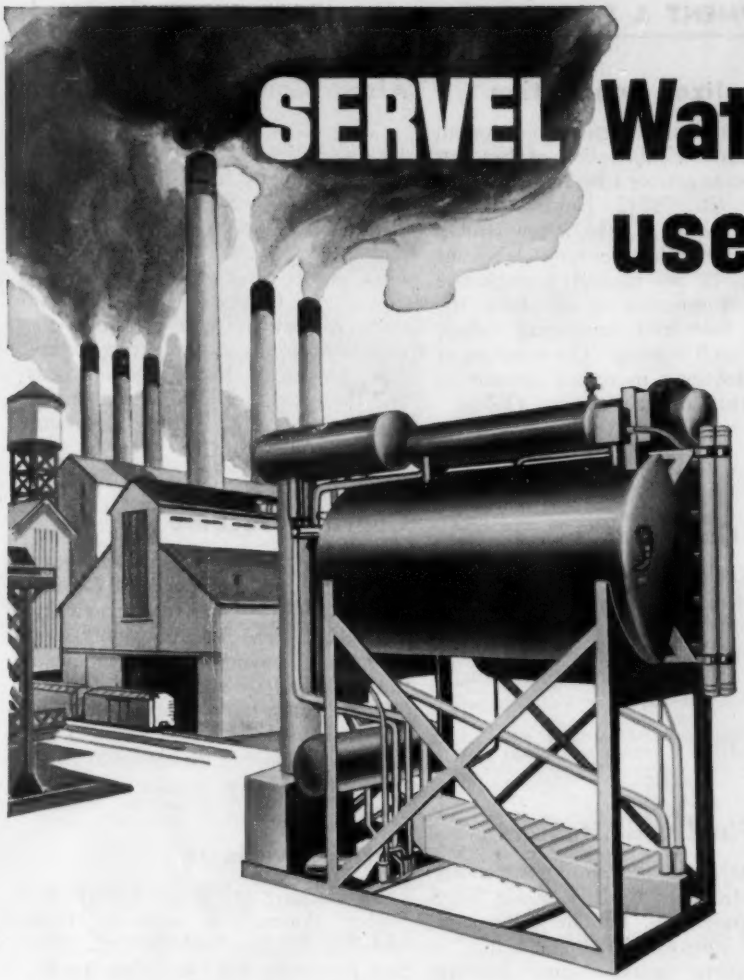
Variable-Speed Pulley

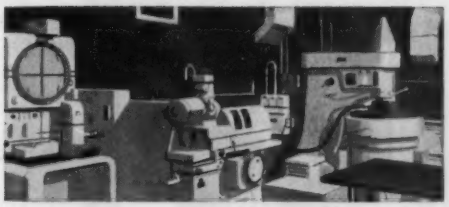
A variable-speed pulley that provides ratios up to 3 to 1 at from 7½ to 15 hp. is available from Lovejoy Flexible Coupling Co., 4839 W. Lake St., Chicago 44, Ill. It changes speed at finger-tip pressure while machinery is in motion. This labor- and time-saving feature is especially valuable for quick changes to compensate for operator ability, corrections for size or density of parts or stock, and adjustments for temperature or humidity. (T-32)

CONTINUED ON PAGE 212

SERVEL Water Chillers use waste heat

to provide low-cost chilled water





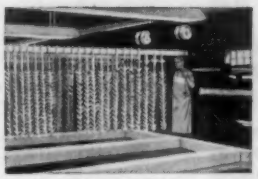
Industrial pre-cooling—Helps you increase capacity and improve performance of air compressors and internal combustion engines.

Turn waste into work and costs are bound to go down. That's just what Servel Water Chillers will do for you.

Servel's exclusive absorption principle uses waste heat (or steam) from any source to provide chilled water and at controlled temperatures. It gives you a cooling agent for air conditioning . . . or for hundreds of process applications.

These efficient units have no moving parts. Give you vibration-free operation and low upkeep. Compact size and low floor loading permit single or multiple installations in the most advantageous locations. You can locate them overhead . . . or outside of the building. What's more, you save the high cost of heavy-duty wiring.

Check these advantages against *your* cooling needs. Your Servel dealer will gladly supply details and engineering help. Or mail coupon today.



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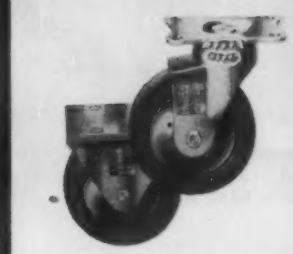
All casters, whether steel or rubber tread, available in swivel and stationary models with various top plates, stems and fittings for any type application.



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EQUIPMENT & SUPPLY NEWS — Continued

Centralized Lubrication

A high-pressure centralized system for controlled lubrication of bearings has been announced by Lincoln Engineering Co., 5742 Natural Bridge Ave., St. Louis 20, Mo. A few strokes of the pump handle force lubricant under 2,500 psi. through a single-line circuit of injectors or adjustable hydraulic force-feed measuring valves, one for each bearing. The injectors or valves deliver a measured amount of oil or grease to each bearing. (T-33)

Bulk Container

The Paltier canvas container handles bulk solids on pallets. It is supplied with aluminum or steel base and tiering posts and is made by Paltier Corp., 1701 Kentucky St., Michigan City, Ind. (T-34)

Gas-Fired Unit Heaters

A line of gas-fired unit heaters has been introduced by L. J. Wing Mfg. Co., Linden, N. J. The ceiling-suspended downward-discharge heater is a complete, self-contained heating unit combining gas burner, combustion chamber, and heat exchanger with a motor-driven fan and fixed or revolving discharge outlets. (T-35)

Alarm Contact Tachometer

The Model SA-6 alarm contact tachometer with an electronic control attachment has been developed by Herman H. Sticht Co., Inc., 27 Park Place, New York, N. Y. This tachometer can be used to open or close valves, stop or start machinery at any preset speed on the scale, and signal operators. The instrument is especially useful in protecting expensive equipment. If the machine jams and the speed drops, the power can be shut off instantly before the motor burns out. (T-36)

Copying Machine

A 42-in. copying machine has been announced by Ozalid, Div. of General Aniline & Film Corp., Johnson City, N. J. Called the Streamliner 400, the all-purpose copying machine will make direct copies, in seconds, of translucent drawings, records, reports, etc. up to 42 ins. wide at synchronized printing and developing speeds up to 24 ft. per min. (T-37)

Fatigue Mats

Interlocking rubber runners for rubber flooring is available from Mitchell Rubber Products Inc., 2114 San Fernando Rd., Los Angeles 56, Calif. Called Air Strip, the runner is available with waffle-pattern bottoms in 28x36-in. sections, ½ or ¼ in. thick. (T-38)

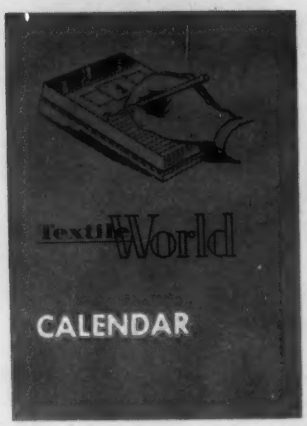
ROUND TABLE

CONTINUED FROM PAGE 10

at least one of the following methods during the past year:

1. He received an increase in pay.
2. His working conditions were improved.
3. His employment record was given some special recognition.
4. He was commended on some particular part of his work effort by his immediate superior (or, better yet, by someone two steps above him).
5. An idea or suggestion he offered was rewarded in some tangible way, either in cash or in mill-wide recognition.
6. Some interesting phase of his home or personal life was the subject of an article or news note in the employees' publication.
7. He was asked to present a short talk or otherwise aid in the instruction of other workers, in an attempt to pass along some outstanding skill that he had developed in connection with his job.
8. Space was found on the bulletin board for a snapshot drawing attention to his hobby, unusually attractive home, large family, or any other part of his life that is a source of satisfaction to him.
9. He received praise from mill management for efficiently handling an emergency.
10. He was asked to assist in some mill-community project such as clean-up campaigns or charitable drives.

GEORGE M. DODSON
Harrisburg, Pa.



July

Southern Industrial Relations Conference, Blue Ridge, N. C., July 20 to 23.

AATCC, South Central Sect., Lookout Mountain Hotel, Chattanooga, Tenn., July 29 and 30.

August

International Wool Textile Research Conference, Sydney (four days), Geelong (five days), and Melbourne (five days), Australia, Aug. 22 to Sept. 9.

Southern Hosiery Manufacturers Assn., annual convention, Hotel Roanoke, Roanoke, Va., Aug. 25 and 26.

September

Machine Tool Show, International Amphitheater, Chicago, Ill., Sept. 6 to 17.

The Fiber Society, fall meeting, Mass. Institute of Technology, Cambridge, Mass., Sept. 8 and 9.

AATCC, Southeastern Sect., Ralston Hotel, Columbus, Ga., Sept. 10.

Tenth Annual Instrument-Automation Conference and Exhibit of the Instrument Society of America, Shrine Exposition Hall & Auditorium, Los Angeles, Calif., Sept. 12 to 16.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Sept. 16.

Combed Yarn Spinners Assn., annual meeting, The Homestead, Hot Springs, Va., Sept. 16 and 17.

Chemical Finishing Conference, National Cotton Council, Chalfonte-Haddon Hall, Atlantic City, N. J., Sept. 20 and 21.

Packaging and Handling Exposition, Kingsbridge Armory, New York, N. Y., Sept. 20 to 22.

AATCC national convention, Chalfonte-Haddon Hall, Atlantic City, N. J., Sept. 21 to 23.

Northern Textile Assn. and National Assn. of Cotton Manufacturers, annual convention, Wentworth-By-The-Sea, Portsmouth, N. H., Sept. 29 and 30.

Textile Methods and Standards Assn., fall meeting, Clemson House, Clemson, S. C., Sept. 29 and 30.

October

Alabama Textile Operating Executives, Thatch Hall, Alabama Polytechnic Institute, Auburn, Ala., Oct. 1.

AATCC, Pacific Southwest Sect., Gourmet Restaurant, Beverly Hills, Calif., Oct. 7.

American Society of Lubricating Engineers, Antlers Hotel, Indianapolis, Ind., Oct. 10 to 12.

North Carolina Textile Manufacturers Assn., annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 13 and 14.

National Council for Textile Education, fall meeting, sponsored by American Textile Machinery Assn., The Larches, Hopedale, Mass., Oct. 17 to 19.

National Safety Congress and Exposition, industrial safety sessions, Conrad Hilton, Morrison, and LaSalle Hotels, Chicago, Ill., Oct. 17 to 21.

AATCC, Philadelphia Sect., Penn-Sherwood Hotel, Philadelphia, Pa., Oct. 21.

The Quartermaster Assn., annual convention, Conrad Hilton Hotel, Chicago, Ill., Oct. 27 and 28.

AATCC, Piedmont Sect., Hotel Barringer, Charlotte, N. C., Oct. 29.

November

American Institute of Electrical Engineers, Mid-Atlantic Textile Conference, N. C. State College, Raleigh, N. C., Nov. 3 and 4.

AATCC, Western New England Sect., Hartford, Conn., Nov. 4.

Carded Yarn Association, annual meeting, Bon Air Hotel, Augusta, Ga., Nov. 10 and 11.

December

AATCC, Philadelphia Sect., Kugler's Restaurant, Philadelphia, Pa., Dec. 2.

AATCC, Southeastern Sect., Atlanta Biltmore Hotel, Atlanta, Ga., Dec. 3.

AATCC, South Central Sect., Hotel Patten, Chattanooga, Tenn., Dec. 10.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Dec. 16.

1956

February

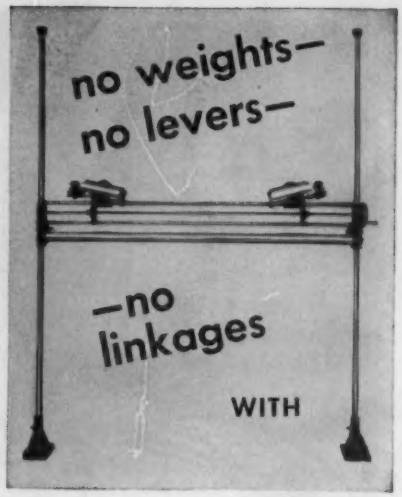
AATCC, Pacific Southwest Sect., Gourmet Restaurant, Beverly Hills, Calif., Feb. 6.

May

The Fiber Society, spring meeting, The Clemson House, Clemson, S. C., May 2 and 3.

June

Materials Handling Institute Exposition of 1956, Public Auditorium, Cleveland, Ohio, June 5 to 8.



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- TRUCKS

Textile World

NEWS about SUPPLIERS

ALLIED CHEMICAL & DYE CORP., NATIONAL ANILINE DIV., New York, N. Y.—Has completed its new Research and Engineering Center at its Buffalo, N. Y., plant. Company will build another plant for the manufacture of aniline oil at Moundsville, W. Va. . . . **ALLIS-CHALMERS MFG. CO.**, Milwaukee, Wis.—Has named William A. Yost, Jr., vice president in charge of staff operations. . . . **AMERICAN CYANAMID CO.**, New York, N. Y.—Has appointed Neil B. Conley director of sales for the Organic Chemicals Div. Louis A. Melsheimer has been appointed director of technical service for the Pigments Div. . . . **AMERICAN PULLEY CO.**, Philadelphia, Pa.—Has purchased Safeway Industrial Equipment Corp., Chicago, Ill. . . . **AMERICAN VISCOSE CORP.**, Philadelphia, Pa.—Has transferred Dr. Arthur L. Allewelt to Textile Chemical Sales as a technical representative. . . . **ANDOVER CO., CROFT WORKS**, Spartanburg, S. C.—Has started the production of fast colors. This unit is under the direct supervision of Harold W. Coward. Erwin Thornton is superintendent, and Walter E. Eskew is technical director. . . . **CANADIAN ASSOCIATION OF TEXTILE COLOURISTS & CHEMISTS**, Montreal, Que.—Has elected Reg W. Redston president. . . . **CELANESE CORP. OF AMERICA**, New York, N. Y.—Has elected Richard W. KixMiller vice president in charge of the chemical division. . . . **CHEMSTRAND CORP.**, New York, N. Y.—Has named Donald W. Bedell as an Acrilan sales specialist. . . . **COCKER MACHINE & FOUNDRY CO.**, Gastonia, N. C.—Has appointed J. S. Fallow, New Bedford, Mass., and Montreal, Canada,

HOWARD R. MEDICI (left) has been named president of Visking Corp., Chicago, Ill. HARRY V. KERKER (center) has been named manager of the newly formed export division of Oakite Products, Inc., New York, N. Y. J. M. HOERNER (right) has been appointed general manager of the Chemical Div. of Armour & Co., Chicago, Ill.

as its agents in New England and Canada. . . . **DRAPER CORP.**, Hopedale, Mass.—Will add 42,000 sq. ft. to its plant in East Spartanburg, S. C. Company will also build a 30,000-sq.-ft. plant in Swannanoa, N. C., for the treatment of lumber used in the manufacture of shuttles and picker sticks. John Draper Gannett has been elected to the board. . . . **E. I. DU PONT DE NEMOURS & CO., INC.**, Wilmington, Del.—Has elected Samuel Lenher a director, vice president, and member of the executive committee. . . . **EASTMAN CHEMICAL PRODUCTS, INC.**, Kingsport, Tenn.—Has appointed John R. Sherrill sales manager of acetate yarn and staple sales. W. T. Jackson has been named an assistant sales manager. . . . **FAIRBANKS CO.**, New York, N. Y.—Has elected Alexander L. Naylor president. . . . **FOXBORO CO.**, Foxboro, Mass.—Has named the

Better beams mean finer fabrics!

Here's how these superior quality beams are warped at National Tricot Co.!

This unretouched photo of warp beams, taken at the National Tricot Co. in Clifton, New Jersey, proves without a doubt that even a yarn as troublesome as unthrown nylon can be warped into smooth, even beams — with the aid of Kidde Warp Compensators!

Take it from the owner of National Tricot Co. — Mr. Herbert M. Aibel. Since installing Kidde Warp Compensators, he reports:

Beams are now smooth, with no more loose or tight ends!

The warp sheet remains taut at all times—even when the warper is stopped: Result — no more tangles!

Higher speed warping is now possible, with even less down time than before!

Kidde Warp Compensator

Tricot machines now operate more efficiently, and overall appearance of finished product has been improved.

These results are *not* unusual. More than 500 leading textile mills throughout the nation now use Kidde Compensators of one kind or another to produce a far better product at lower cost. Find out more about Kidde Compensators — write Kidde today!

Kidde (K Kidde)

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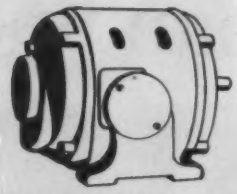
Walter Kidde & Company, Inc., 791 Main Street, Belleville 9, New Jersey

New Oakite Safety Solvent Cleans without Water



Wherever water-base detergents or water rinses present a serious rust problem try Oakite Composition No. 116. It's a completely safe (flash point 234 deg. F. C.O.C.) cold-cleaning material that requires no rinse. When brushed or sprayed on surfaces and allowed to penetrate for a few minutes, its powerful emulsifying action quickly dissolves grease, oil and other soils. A quick application of pressure air removes all traces of the loosened dirt and grime. For further details, write Oakite Products, Inc., 42 Rector St., N. Y. 6, N. Y.

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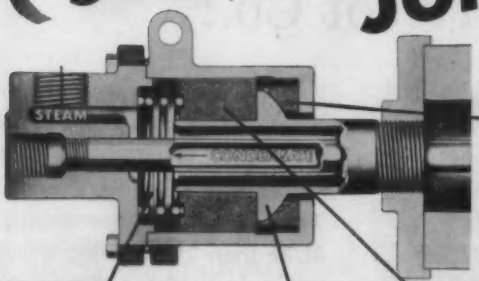
Only 4 internal parts in this self-supporting Johnson Joint


STEAM
1. SEAL RING — of special carbon-graphite. Eliminates packing and oiling.
4. SPRING — For initial seating only. In operation joint is pressure sealed.
3. NIPPLE — Rotates with roll, seals against ring.
2. GUIDE — Also of carbon-graphite. Makes joint self-supporting.

With this 3000 Series Type S-B2 Joint, an assembly plate can be added at any time; it is used with the Johnson Syphon Elbow, to hold internal parts in position when the head is removed. Write for Bulletin No. S-2001.

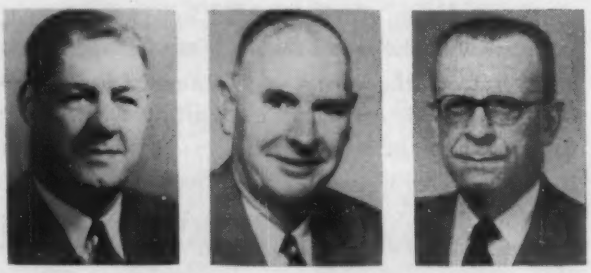
The Johnson Corporation
814 Wood St., Three Rivers, Mich.

NEWS ABOUT SUPPLIERS Continued

following as regional managers: H. H. Michelmore, New England; E. R. Hickman, New York; J. B. Deaderick, Philadelphia; E. W. Prendergast, Atlanta. . . . **ROBERT GAIR CO.**, New York, N. Y.—Has opened a new container plant in Atlanta, Ga. Joseph L. Sterrett has been appointed sales-promotion representative for the shipping-container division in New York. . . . **HERCULES POWDER CO.**, Wilmington, Del.—Has started operations in its new $4,000,000 addition at Burlington, N. J. . . . **KOPPERS CO., INC.**, Pittsburgh, Pa.—Has purchased all the outstanding stock of American Aniline Products, Inc.

ROY G. HEMMINGHAUS (left) has been promoted to the newly created position of vice president in charge of production for Chemstrand Corp., Decatur, Ala. JOHN S. McGILLY (center) has been named assistant sales manager of the Textile Fibers Dept., Carbide & Carbon Chemicals Co., New York, N. Y. JOHN S. BRICE (right) has been named a field representative for the Chemical Div. of Goodyear Tire & Rubber Co., with headquarters in Atlanta, Ga.

. . . **MOUNT HOPE MACHINERY CO.**, Taunton, Mass.—Has opened a new repair and service branch, in Charlotte, N. C. . . . **J. E. RHOADS & SONS**, Philadelphia, Pa.—Has moved its main office to Wilmington, Del. . . . **SARCO CO., INC.**, New York, N. Y.—Has named Hoffman & Hoffman Co., Greensboro, N. C., as its sales representative in North and South Carolina. . . . **SEYDEL-WOOLLEY & CO.**, Atlanta, Ga.—Is expanding its storage and manufacturing facilities for the Finishing Chemicals Div. Plans are under way for the expansion of the company's laboratory facilities. . . . **TORRINGTON CO.**, Torrington, Conn.—Has elected Edward B. Thompson vice president of sales and William R. Reid, Jr., assistant secretary and general sales manager. . . . **TYER RUBBER CO.**, Andover, Mass.—Has appointed V. J. Fazio assistant sales manager of the Industrial Products Div. . . . **UNITED STATES TESTING CO., INC.**, Hoboken, N. J.—Has moved its Philadelphia Branch Laboratory to larger quarters at 3925 M St. . . . **VIRGINIA-CAROLINA CHEMICAL CORP.**, New York, N. Y.—Has named William T. Burgin and V. J. Dionne to the Vicara sales department of the Fiber Div. . . . **WEST POINT FOUNDRY & MACHINE CO.**, West Point, Ga.—Has been granted a license to manufacture Griffin size applicators. . . . **WHITIN MACHINE WORKS**, Whitinsville, Mass.—Has named William G. Stainton selling agent with headquarters in the Atlanta, Ga., office.



JOHN G. HENRIKSON (left) has been named sales manager of Graton & Knight Co., Worcester, Mass. JOHN F. FITZGERALD (center) has been named a vice president of National Starch Products, Inc., New York, N. Y. MARSHALL L. HALL (right) has been named sales and technical representative for Mona Industries, Inc., Paterson, N. J., in the New England states.

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All department stores, practically every chain and independent — large or small — know all about factoring. They get many thousands of bills monthly that are payable to factors; and they often get them from very large organizations which have chosen the factoring method because they find it works best and most economically for them. More and more industries are adopting factoring because of its advantages.

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Textile World

NEWS about MILLS

COTTON MILLS

Avondale Mills, New York, N. Y., will move its offices to 1430 Broadway in August.

Belding Corticelli, New York, N. Y., has opened a new warehouse in South Hackensack, N. J. The company's billing, filing, and credit departments will occupy part of the 45,000-sq.-ft. building.

Caldwell Linen Mills Ltd., Iroquois, Ont., will build a new plant to replace its present mill that must be vacated as a result of the St. Lawrence Seaway Development. Plans and specifications are being prepared by the Engineering Dept. of Dominion Textile Co. Ltd., Montreal, Que., under the direction of E. B. Jubein, chief engineer.

Dan River Mills, Inc., Danville, Va., plans to spend approximately $2,750,000 on improvements during the coming year.

Graniteville Co., Graniteville, S. C., has ordered 29 spinning frames and 10 roving frames from Saco-Lowell Shops, Boston, Mass., for the addition now under construction at the Hickman Div. The equipment is expected to be in production by the end of this year.

Greenwood Mills, Greenwood, S. C., is installing machinery imported from Switzerland in its new power plant. Alfred Kung, of the Brown-Bovert Co., is in charge of the installation.

Indian Head Mills, Inc., Cordova, Ala., has placed a contract with Draper Corp., Hopedale, Mass., for 85 new X-2 60-in. looms to replace 152 old E-Model belt-driven looms.

Merrimack Mfg. Co., Lowell, Mass., has an expansion program under way at its mill. The company plans to operate on a three-shift basis when the work is completed.

Micolas Cotton Mills, Opp, Ala., is nearing completion of a $500,000 expansion program. New machinery, including 54 cards, 42 deliveries of drawing, 528 slubber spindles, 10,800 spinning spindles, and 228 looms, will be installed.

Pacific Mills, Boston, Mass., has moved its executive and administrative offices to 1407 Broadway, New York, N. Y. The company will maintain its sales office in Boston.

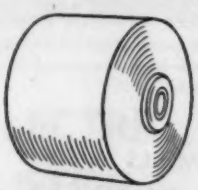
Shuford Mills, Inc., Hickory, N. C., is building a $170,000 one-story addition. Guy Frye & Sons, Inc., Hickory, is the contractor.

Springs Cotton Mills, Lancaster, S. C., has completed a new 58,000-sq.-ft. supply room at its Kershaw, S. C., mill.

Texas Textile Mills, Dallas, Tex., is expanding its Gonzales, Tex., plant at an estimated cost of $285,000.

Wamsutta Mills, New Bedford, Mass., has moved its offices and showrooms to the eighth floor at 1430 Broadway, New York, N. Y.

Woodside Mills, Greenville, S. C., will build a 100,000-sq.-ft. warehouse near its Greenville mill. The $400,000 reinforced-concrete building will be erected by Daniel Construction Co., Greenville. The warehouse will consist of 10 compartments of 10,000 sq. ft. each. There will also be 21,000 sq. ft. of covered platform.



LARGE PACKAGES HAVE ADVANTAGES IN THE STEPS THAT FOLLOW SPINNING

The new Type "D" Barber-Colman cheese holds 6½ lbs., which is 120,000 yards of 24s yarn, or 2½ times as much as the standard Type "C" cheese. This gives more slasher beams per cheese, even in the 40"-head size, and thus more loom beams per set. *This increase in loom beams per set, and the consequent reduction in creelings per week, can provide substantial cost reductions in many mills.* Similar advantages are available in the twisting.

The new Barber-Colman Type "DW" Warper shown above will wind slasher beams as large as 40" head. It has all the features of the familiar Type "VW", plus several new ones such as a pivoted comb support which moves the comb forward as the beam fills. The driving drum, clutch, brake, and motor — all of which are larger and more rugged to handle the heavier loads — are now arranged back of, rather than beneath, the beam. The creel shown is not the new Type "DC" Creel but is the standard Type "VC", as the new Warper can be used with either the large *or* the standard package. *For further details, please write for descriptive literature, or ask your Barber-Colman representative.*

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For *all* your Barber-Colman machines, be sure to call on the Service Department of your nearest Barber-Colman office. The men who staff this organization are specially trained and equipped, with a wealth of experience in checking, maintaining, repairing, and modernizing all types and models of Barber-Colman equipment. They are backed by alert main and branch offices who see that they are supplied with complete and reliable parts and information.

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NEWS ABOUT MILLS — Continued

WOOLEN AND WORSTED MILLS

Amerotron Corp., Greenville, S. C., will construct a 400,000-sq.-ft. woolen mill at Barnwell, S. C. The new mill will be completely integrated with spinning, weaving, dyeing, and finishing operations. The windowless building will be completely air conditioned.

Hargo Woolen Mills, Inc., New Bedford, Mass., has purchased the property of the former Keene Silk Fiber Mill, Keene, N. H. Hargo will move all its facilities here as part of a $250,000 expansion and consolidation program. The carding and spinning capacity has been increased about 20%, and weaving facilities have been increased about one-third.

Pendleton Woolen Mills, Pendleton, Ore., has started production of men's slacks in the former Oregon City Woolen Mill, Oregon City. Production of Pendleton jackets may start later at this location. Lee Stephenson is production manager.

J. P. Stevens & Co., Inc., Milledgeville, Ga., plans to build a 220,000-sq.-ft. mill in Dublin, Ga., for the expansion of its woolen production.

SYNTHETICS MILLS

Burlington Industries, Greensboro, N. C., will spend $1,000,000 on improvements in its Mays plant at Cramerton, N. C., and the Ranlo, Flint No. 1, and Flint No. 2 plants in Gastonia, N. C. New machinery will be purchased. An additional $1,000,000 will be spent in plant improvements over the next few years.

Consolidated Textile Mills Ltd., Montreal, Que., has purchased 72 automatic wide-fabric Draper looms, plus all necessary auxiliary equipment. This purchase completes an extensive expansion and modernization program that has been under way at the company's St. Hyacinthe, Que., mill. When installation is completed, the production of the mill will have been increased by about 20%.

KNITTING MILLS

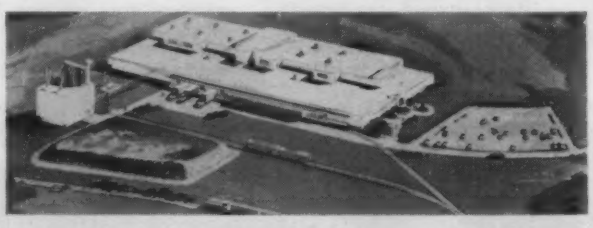
Alba Hosiery Mills, Inc., Valdese, N. C., is the new name of the former Pilot Full Fashion Mills, Inc.

Archdale Hosiery Co. will establish a new hosiery mill at High Point, N. C. About 30 persons will be employed at the start of operations.

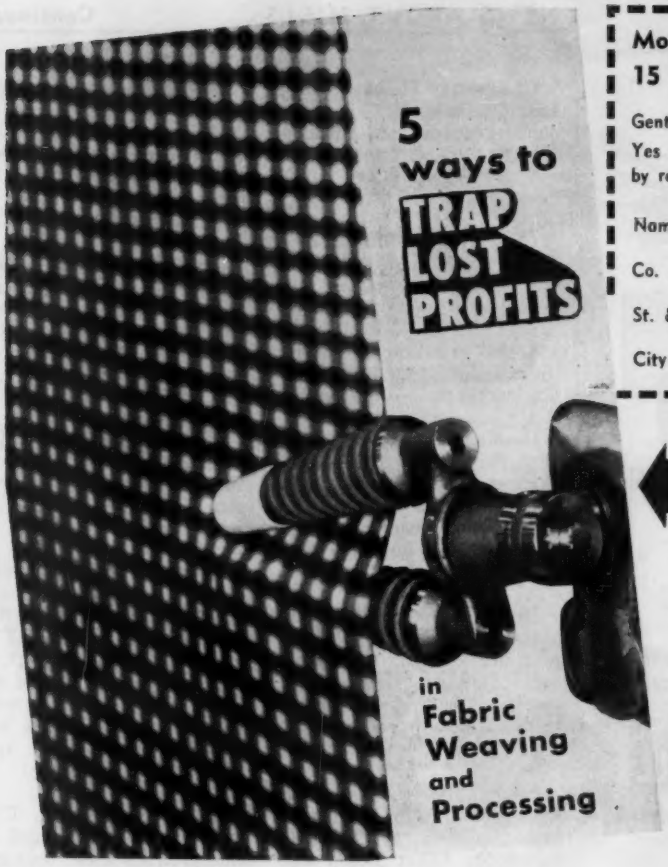
Bear Brand Hosiery Co., Fayetteville, Ark., has closed bids for the installation of an air-conditioning system in its mill. R. E. Blaylock & Associates, Little Rock, Ark., is the consulting engineer.

Beaunit Mills, Inc., New York, N. Y., has installed new interlock machinery in its Beverly, N. J., plant. Capacity of the firm's cotton knit division has been boosted by 35%.

Bell Hosiery Co., Spruce Pine, N. C., has completed a 30x50-sq.-ft., one-story addition to its plant.



COLLINS & AIKMAN CORP., New York, N. Y., is building this $2,500,000 plant in Albemarle, N. C., to enlarge and modernize the company's capacity for dyeing and finishing fabrics. The company's research facilities for weaving and dyeing will also be located here. This new plant will replace the company's present plant in Philadelphia.



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FOR UNDERWEAR OUTERWEAR HOSIERY

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USED ON ALL THESE KNITTING MACHINES:

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Wesco engineers are never satisfied. They keep pace with the developments of all new outerwear, underwear and hosiery knitting machines. The end result is that Wesco is standard equipment in the finest mills throughout the world. Wesco Stop Motions guard machines against press-offs, prevent needle breakage, improve the work and increase profits. You can't go wrong when you specify Wesco Stop Motions.

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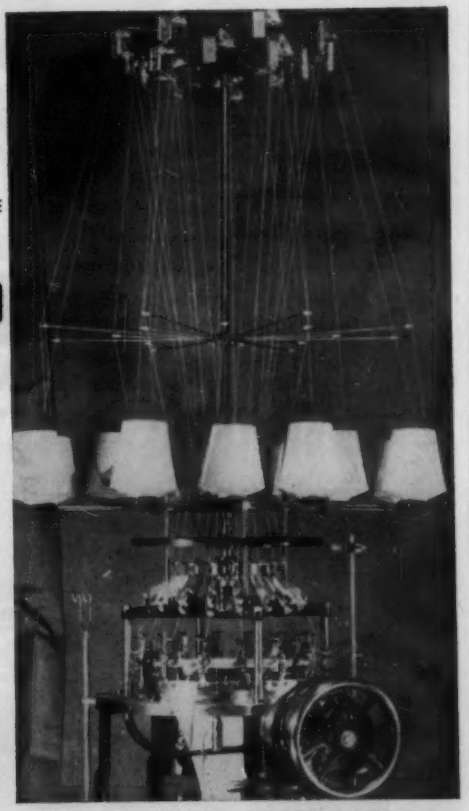

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NEWS ABOUT MILLS — Continued

Chadbourn Hosiery Mills, Inc., Charlotte, N. C., has acquired control of Shannon Hosiery Mills, Columbus, Ga., and will operate it as a subsidiary.

Cline Hosiery Mill, Spruce Pine, N. C., is doubling the floor space of its hosiery mill by adding a second floor to its present building. When the addition is completed, the company will have about 12,000 sq. ft. of floor space.

Davidson Hosiery Mill Co., High Point, N. C., is building a one-story, 2,500-sq.-ft. addition to its mill on Wart St. Dyeing and boarding equipment will be installed. The cost is estimated at $4,000.

Hollar Hosiery Mills, Hickory, N. C., plans to build a plant in Hickory in the near future. The new building will contain 12,000 sq. ft. of floor space. Abernethy & Scott is the engineer.

Landis Hosiery Co., Inc., Philadelphia, Pa., is moving to larger quarters at 131 N. Eighth St. About $5,000 will be spent on new equipment.

Morris Knitting Mills Corp., Brooklyn, N. Y., is installing a battery of Reading full-fashioned outerwear knitting machines. The top floor of the company's plant has been set aside to house the new full-fashioned machines and the necessary auxiliary equipment. When in full operation, the department will include a battery of V-type flat machines for the manufacture of rib cuffs, collars, and bottoms.

Nolde & Horst Co., Philadelphia, Pa., has opened a plant in Pittsboro, N. C., for the production of women's seamless hosiery. About 60 knitting machines will be in operation by next year.

Pons Full Fashion Mills, Valdese, N. C., has purchased full-fashioned sweater machines from Robert Reiner, Inc., Weehawken, N. J. The company has increased its capitalization to $500,000.

Richland Knitting Mill, Richland, Pa., is building a small addition to its plant. The space will be used to install additional machinery.

Setz-Right Hosiery Mills, Inc., Hickory, N. C., has awarded the contract for the construction of a new mill to Herman-Sipe Construction Co., Conover, N. C. Much of the present equipment will be sold. New Hemphill machines will be installed to produce specialty and novelty hosiery.

Summit Mills Corp., Philmont, N. Y., has changed its name to Mister Ease, Inc., and has moved its New York offices to 5 E. 35th St.

Wayne Knitting Mills, Inc., Fort Wayne, Ind., has purchased Prim Hosiery, Inc., for $2,000,000. Wayne has taken over control of Prim's home mill in Chester, Ill., and two affiliated mills in Jackson, Mo.

Wright Knit Hosiery Mill, Inc., Hickory, N. C., has a $6,000 expansion and alteration program under way in its main building and warehouse.

DYEING & FINISHING PLANTS

American Dyeing Corp., Rockville, Conn., will construct a 110,000-sq.-ft. plant that will double its present dyeing, printing and finishing capacities. The cost is estimated at $500,000, exclusive of equipment. Completion is scheduled for late this year.

Delta Finishing Div., J. P. Stevens & Co., Wallace, S. C., has completed its 52,000-sq.-ft. addition. The cost was $186,000.

Dixiana Mills, Inc., Laurinburg, N. C., is nearing completion of a steam plant and an addition to its present mill building. The addition will facilitate finishing operations.

Intertex Corp., Fall River, Mass., has purchased all the textile printing, bleaching, and finishing machinery of Southbridge Finishing Co., Southbridge, Mass.

Union Bleachery, Greenville, S. C., has purchased equipment that will be used to process its bleaching and dyeing residue.

Waldrich Co., Delawanna, N. J., has leased a factory on Oak St., Passaic, N. J., that will be remodeled and improved.

Also investigate our complete machinery and equipment for cutting and brushing of:

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NEWS about MEN

Edward M. Abbot has been elected chairman of the board of Abbot Worsted Co., Forge Village, Mass. Others elected are: **Alexander A. Cameron,** president; **E. Kent Allen,** general manager; **Bradley A. Cameron,** vice president and sales administrator.

Harold Ackerman has been elected president of A. D. Juilliard & Co., Inc., New York, N. Y. **Adolph Bleiman** has been elected executive vice president, and **Richard H. Moyle** has been elected vice president.

William B. Amos has been named superintendent of the dyeing and finishing plants of Jefferson Mills, Inc., Jefferson, Ga.

Fred E. Andrews has been named overseer of dyeing and finishing at Ziock Industries, Brownwood, Tex. **George Andrews** has been named boss dyer.

Harry G. Bell has been promoted to vice president in charge of production at Adams Millis Corp., High Point, N. C. **James E. Lewis** has been appointed superintendent of full-fashioned hosiery production, and **Walter Voncannon** has been named superintendent of the finishing department.

Dante Berini has resigned as personnel manager of Seminole Mills, Statesville, N. C., and has accepted a similar position at Brookford Mills, Hickory, N. C.

Lester Boger has been named superintendent of knitting at Ramseur Interlock Knitting Co., Ramseur, N. C.

Wendell W. Bowen has been promoted to assistant superintendent of rayon finishing at the Ware Shoals, S. C., mill of Riegel Textile Corp.

Ernest C. Bratt has been named superintendent of the Wyandotte Worsted Co., Waterville, Me.

Fisher A. Brooks has been named to head the quality-control department of Hudson Hosiery Co., Charlotte, N. C.

R. Norman Brown has been named general superintendent of Lippitt Worsted Mills, Woonsocket, R. I.

Herman Burrell has been named personnel manager of the Statesville, N. C., division of Seminole Mills.

John F. Byrne has been named controller of Princeton Worsted Mills, Trenton, N. J.

Horace A. Carter has been elected president of William Carter Co., Needham Heights, Mass. **Lyndall F. Carter** has been elected to the board of directors.

Frank A. Cooper has been named technical manager at Paragon Knitting Mills, Inc., Philadelphia, Pa.

James R. Copland, Jr., has been elected president and treasurer of Copland Fabrics, Inc., and Copland-Fowler Industries, Inc., Burlington, N. C.

J. Davidson has resigned as overseer of carding on the third shift at Malden Spinning & Dyeing Co., Malden, Mass.

Frederick T. Davies has been appointed plant manager of the new velvet division of Hightstown Rug Co., Hightstown, N. J.

Laurens D. Dawes has been elected to the board of Munsingwear, Inc., Minneapolis, Minn.

Saul F. Dribben has been elected chairman of the board of Cone Mills Corp., Greensboro, N. C. Others elected are: **Lewis M. Heflin,** president;

John E. Field, secretary-treasurer, **Harvey F. Raymond**, assistant vice president.

Clarence Evans has resigned as dyer for Kezar Falls Woolen Co., Kezar Falls, Me.

John Firth has been named overseer of carding on the night shift at Alden Spinning Mills, Talcottville, Conn.

Roland G. Gilchrist has been named night superintendent at the Southwell Combing Co., North Chelmsford, Mass.

James H. Good has been promoted to personnel manager of Monarch Mills, Lockhart, S. C.

Thomas A. Gray has been named general superintendent of the Conestee, S. C., mill of Wyandotte Worsted Mills.

John D. Green has been named a vice president and director of P. H. Hanes Knitting Co., Winston-Salem, N. C.

William Gregory has been named overseer of dyeing at Seymour Woolen Mills, Seymour, Ind.

Rufus Hale has resigned as assistant treasurer of Pacific Mills, Boston, Mass. He will continue as a consultant.

J. D. Huggins has been named superintendent of Mock, Judson, Voehringer Co., Greensboro, N. C.

Everett L. Hull has been named comptroller of Sidney Blumenthal & Co., Inc., New York, N. Y.

Robert R. Hunt has been named overseer of carding at Jefferson Mills, Jefferson, Ga.

William E. Jackson has been named plant manager at Verney Corp., West Peterborough, N. H.

J. L. James has resigned as manager of the Cooleemee, N. C., plant of Erwin Mills, Inc.

Robert H. Jones has been promoted to superintendent of production at Hatch Mill, Columbus, N. C. **Phillips Byfield, Jr.**, has been named to succeed Mr. Jones as manager of Excelsior Mills, Rutherfordton, N. C.

C. Harry Landenberger has been named president of J. W. Landenberger & Co., Philadelphia, Pa. **J. W. Landenberger, Jr.**, has been named chairman and treasurer.

Frederic F. Lawall has been elected to the board of Chipman Knitting Mills, Easton, Pa.

Robert M. Lesh has been named superintendent and research director at Northern Dyeing Corp., Washington, N. J.

Rex R. Maltbie has been elected secretary and assistant treasurer of Mohawk Carpet Mills, Inc., Amsterdam, N. Y.

Paul W. Maus has been named vice president and will assume the duties of general manager of Phil Cord Co., Monroe, N. C. Mr. Maus has also been elected a vice president of Carroll Hosiery Corp., Hillsville, Va. **Bernard Kemmerling** has been promoted to plant superintendent at Phil Cord.

William D. McBee has been promoted to plant superintendent of the Monarch Plant of Monarch Mills, Union, S. C. **William E. Lancaster** has been named overseer of spinning.

John J. Murphy has resigned as vice president of Julius Kayser & Co., Inc., New York, N. Y.

George Payne has been elected a director of Verney Corp., Manchester, N. H.

Elliott Peterson has been named vice president in charge of all manufacturing operations for Alexander Smith, Inc., New York, N. Y.

Edward F. Reade has been named overseer of dressing at George Mabbett & Sons Co., Plymouth, Mass.

Richard K. Rees has been named superintendent of Arcade Cotton Mills, Rock Hill, S. C.

Arthur T. Roth has been elected to the board of Textron

UTICA Combination Winding and Cutting Machine

To meet your special requirements, ask for information on Heavy Duty Model — also Utica Individual Roll Winders and Strip Cutters.

1 machine does the work of 2

THIS fast-producer has all the advantages of two machines, but uses the floor space of just one. Cuts light, medium, or heavy weight, both straight and bias fabrics. Cutter and Winder can be run at the same time. Rigidly constructed for long, trouble-free operation. Has measuring scale for cutting accurate rolls. It's safe—knife, grinding wheel, all gears and sprockets are well-guarded. Equipped with Veeder Root yardage counter. Made in 40, 45, and 55 inch width machines. Make your own bindings—as you need them—from the same material as your product—at lower cost. Write today.

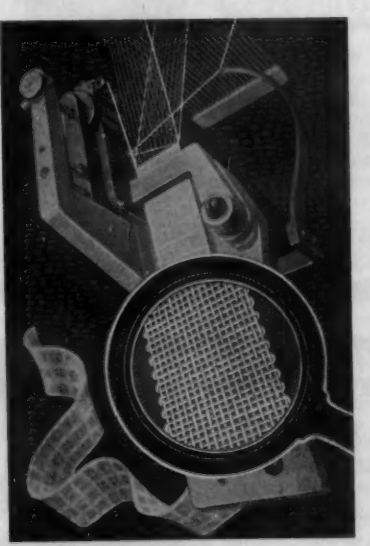
UTICA

NOVELTY AND MILL SPECIALTY CO.

2145 DWYER AVE., UTICA 2, NEW YORK

Builders of Textile Machines Since 1903

TEXNOVO AUTOMATIC SHUTTLELESS TAPE & RIBBON LOOM



Patented Bobbin Weaving Unit for Shuttleless High Speed Manufacture of Rigid or Elastic Ribbons Having Identical Selvedges on Either Side.

This Unit Is Fitted:

1) To Texnovo Looms with 2, 10, and 20 Heads, Reducing Labor Costs by 80% and

2) To Most Makes of Shuttle Looms, Reducing Labor Costs by 80% and Triplicating Previous Production.

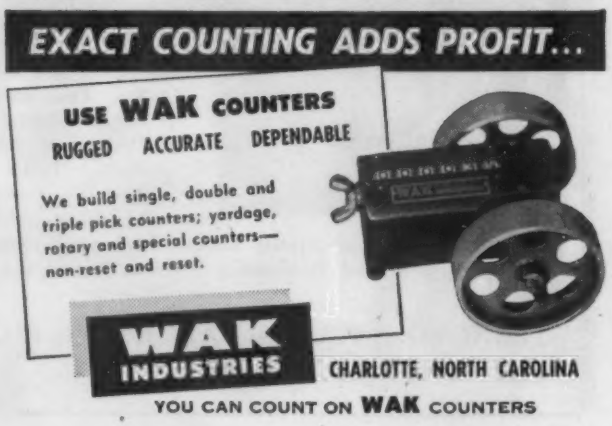
TEXNOVO S.P.A. Via Revere, 8
ITALY MILAN

For more information, write direct or use Reader-Service post card. 225

GARNETT—FLOOR CONVEYOR—ALL SHAPES—SIZES—HARDWOOD SLAT
PLAIN AND SPIKE FEED BOX-PICKER
APRONS
SLATS
Plain & Pinned All Sizes & Shapes Hard & Soft Woods
Plain & Pinned Rolls & Cylinder
Lags
Tenter Plates
Picker & Shredder Teeth
ROBERT A. MAIN & SONS, INC.
268 PASCACK RD. MANUFACTURERS PARAMUS, N. J.

The Kuljian Corporation
RAYON PLANTS & TEXTILE MILLS
KULJIAN
• DESIGN
• CONSTRUCTION
• MANAGEMENT
1200 N. BROAD ST., PHILA. 21, PA.
MEXICO CITY • CARACAS • MADRID •
ROME • ATHENS • TOKYO • CALCUTTA

CREATED FOR THE TEXTILE INDUSTRY
the DUROMETER
FOR TESTING WINDING DENSITY
Created to solve the problem of maintaining uniform density for unwinding in later processes, the DUROMETER saves time and money. Tests density of windings on spools, cones, bobbins, cops and package dyeing tubes.
Write today for bulletin R-8
Shore INSTRUMENT & MFG. COMPANY, INC.
90-35 VAN WYCK EXPRESSWAY, JAMAICA 35, N.Y.


EXACT COUNTING ADDS PROFIT...
USE WAK COUNTERS
RUGGED ACCURATE DEPENDABLE
We build single, double and triple pick counters; yardage, rotary and special counters—non-reset and reset.
WAK INDUSTRIES
CHARLOTTE, NORTH CAROLINA
YOU CAN COUNT ON WAK COUNTERS

NEWS ABOUT MEN — Continued

American, Inc., Providence, R. I.

Morton Schlesinger has been named laboratory manager at Nu-Dye & Finishing Co., Paterson, N. J.

James Soutar has been named overseer of dyeing at the Felters Co., Milbury, Mass.

Richard C. Stidson has retired as vice president and a director of Limerick Yarn Mills, Manchester, N. H.

Joseph W. Toomey has been named superintendent of finishing at Bachmann Uxbridge Worsted Corp., Uxbridge, Mass.

Floyd Waterhouse has resigned as overseer of carding at John B. Davidson Woolen Mills, Inc., Eaton Rapids, Mich.

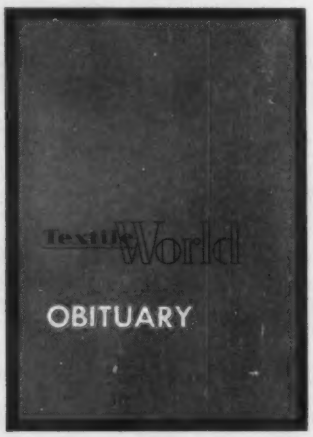
Frank C. Williams has been named superintendent of Roanoke Mills Co. No. 1, Roanoke Rapids, N. C. He succeeds **A. O. Pendleton**, retired.

Henry H. Williams has joined Whisnant Hosiery Mills, Hickory, N. C.

Fred L. Wilson has been appointed general superintendent of Cannon Mills Co., Kannapolis, N. C.

Leo Wolff has been elected a vice president of The Bell Co., Worcester, Mass. **Sargent D. Heath** has been elected treasurer. **Robert A. Mitchell** and **Thomas F. Draper** have been elected directors.

J. Douglas Woods has been named president of York Knitting Mills Ltd., Toronto, Ont.



Luther D. Blackwell, 43, superintendent of the weave room of Judson Mills, Greenville, S. C.

Julius B. Cronheim, 70, a vice president of Fulton Bag & Cotton Mills, Atlanta, Ga.

C. C. Cranford, 80, president of Asheboro Hosiery Mills, Asheboro, N. C.

Walter F. Fancourt, III, 44, president of W. F. Fancourt Co., Philadelphia, Pa.

J. Frank Hoffman, senior vice president of California Hand Prints, Inc., Hermosa Beach, Calif.

Edwin W. McGowan, 60, vice president of Wyandotte Worsted Co., Waterville, Me.

John L. Moffatt, 81, overseer of the finishing room of Dominion Textile Co. Ltd., Magog, Que.

Walter J. Mooney, 63, president of Ballston-Stillwater Knitting Co., Albany, N. Y.

Claude D. Morris, 60, vice president and general manager of Palmetto Cotton Mills, Palmetto, Ga.

James R. Redmond, 40, vice president and New England district manager of the Textile Colors Div. of the Interchemical Corp., Providence, R. I.

Walter A. Wood, 55, overseer of the spinning room at Dacotah Cotton Mills, Lexington, N. C.

EMPLOYMENT OPPORTUNITIES

The Advertisements in this section include all employment opportunities—executive, management, technical, selling, office, skilled, manual, etc.

Positions Vacant
Positions Wanted
Part Time Work

Civil Service Opportunities
Selling Opportunities Wanted
Selling Opportunities Offered

Employment Agencies
Employment Services
Labor Bureaus

RATES

DISPLAYED

The advertising rate is $14.85 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

An advertising inch is measured ⅞" vertically on a column—8 columns—30 inches to a page.

Subject to Agency Commission.

UNDISPLAYED

$1.20 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.

Box Numbers—counts as 1 line.

Discount of 10% if full payment is made in advance for 4 consecutive insertions.

Not subject to Agency Commission.

Send NEW ADS to TEXTILE WORLD, 330 W. 42nd St., N. Y. 36, N. Y. for August issue closing July 18th

POSITIONS OPEN

We can place—SUPT. nar. non-elastic fabrics; supt. knit. piece goods; supt. rayon yarn converting plant; cot. mill supt. large plant; woolen yarn supts.; supt. cot. synthetic fibre yarn mill, able to speak French as well as English language; supt. filament warp preparation and weav. plant; wstd. yarn supt.; supt. rayon coarse yarn mill, cot. system; supt. fancy jersey dept.; dept. head non-elastic fabrics; win., wstd. and rayon goods designers; asst. supt. French and Bradford sys. wstd. yarns; warp preparation foreman, rayon and cot.

OVERSEERS FOR braiding; win. and wstd. dyeing; sewing; cot. card. and spin. combined; cot. weav. and designing combined; win. card. and spin. combined; wstd. card.; weaving non-elas. webbing; silk skein dye.; garnetting; picking; finishing high pile plush fabrics.

SECOND HANDS win. and wstd. dyeing; raw stock and package dyeing; win. finishing; silk skein dyeing; wstd. top and piece dyeing.

CHEMISTS and laboratory men; tex school graduates; salesmen paper makers felts; chief industrial engineer; time study men; master mechanics; plant engineers; service engineer textile mach. firm; mach. shop foreman; salesmen and demonstrators.

FIXERS for woolen mules and spin. frames; sewing mach. fixers; loom fixers; win. card fixer; fixer rib knit. machines; garnett-picket fixer; hos. machine fixers; velvet loom fixer; fixers for Komet, Links and Links; Wildman, Brinton, Stafford & Holt, latch needle, Sinker top pattern wheel and Leighton transfer machines; long chain beamer; fixer French wstd. combs.

If you are available for a good paying position in the textile field, it will pay you to have your application in our files. We are receiving more inquiries and placing more men than for several months. Negotiations are confidential. No fee to be paid unless you accept employment through our service.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St. Boston 8, Mass.
Phone: Liberty 2-6547
Over 55 Years In Business

ASSISTANT MANAGER

Wanted, young man, between 30 and 35 years of age, to train to become manager of a yarn mill. The man we are looking for must have textile school training and be presently employed in a spinning mill producing carded, combed and blended yarns for the hosiery and weaving trade. Spinning worsted on the American system desirable but not absolutely essential. Please reply giving full information and details as to experience, age, etc. Replies will be held in strictest confidence. Mill located in Ontario.

P-6714, Textile World
330 W. 42 St., New York 36, N. Y.

DYEING AND FINISHING EXPERT

Graduate in chemistry, color or textile chemistry. Must have broad experience in laboratory and process. For technical service and development work. Unimpeachable character and attractive personality. Willing to travel. Good salary and opportunity for constructive work.

Send full particulars to:

Director of Industrial Relations
COURTAULDS (Alabama) Inc.
P. O. Box 1076, Mobile, Alabama

textile ENGINEERS

1. **Physicist,** Mechanical Engineer or Textile Engineer, experience in textile or related industry. To develop basic understanding of fiber usage from an engineering point of view, including studies on conversion of fibers into yarns, yarns and continuous filaments into fabrics, and fabrics into end use products.

2. **PhD or equivalent in physical chemistry,** 5 to 8 years experience some of which should have been in fiber research. To assist in planning and coordinating problems in basic fiber research covering relationship of molecular and micro structure to mechanical, thermal and other physical properties.

3. **Research Textile Engineer,** BS in Physics or Mechanical or Textile Engineering or recognized textile school graduate, with some experience desirable. To evaluate new fibers and fabrics with regard to functional performance and to correlate physical properties of fibers & yarns with performance.

4. **Chemist, Chemical Engineer or Physicist,** BS or advanced degrees with several years experience, preferably in textile research. For research and development in synthetic fiber spinning, development of processes for production of new fibers and improving existing fibers.

The continuing growth of the Celanese Corporation in the textile, chemical and plastics industries creates openings for qualified men in the Research Laboratory located in Summit, New Jersey, a pleasant residential community within 30 miles of New York City. These positions are permanent, and provide excellent opportunity for personal growth and advancement.

Please write complete details, including salary requirements, to Mr. J. A. Berg.

Celanese Corporation of America
Morris Court Summit, N. J.

sales director
for
MAN-MADE FIBERS

Unusual opportunity for a high caliber sales executive in a nationally-known fiber-producing company.

We want a man with a successful background in sales management. He should be able to assume quickly full responsibility for the entire fiber sales operations of an expanding organization.

This is a position which needs a progressive, resourceful manager, a man who can make top management decisions and lead the way. It offers an attractive salary and benefits.

Provide full details of qualifications and income expected. All replies in strict confidence.

Advertising Box #591, Room 1201
230 West 41 St., New York 36, N. Y.

EMPLOYMENT OPPORTUNITIES

Nationally prominent multi-plant producer of chemical yarns and fibers requires a top-level Operations Director to plan and coordinate its textile operations to achieve high quality production, reduced costs and full utilization of equipment.

The man we seek is a creative engineering executive type, not over 45 years of age, a Textile or Mechanical Engineering graduate, who possesses a sound experience record in Textile mill operations and a good knowledge of mill requirements in yarn and package performance.

textile operations director

Candidates must have the ability and capacity to spark and direct development work in textile machinery; advise production staffs regarding most efficient and effective production schedules under varying conditions; establish production procedures, measures for product quality and specifications for all textile operations and products; prepare program of modification or expansion of textile facilities; develop improvement in processing of textile products for cost reduction and explore with other staff members the development, production and ultimate sale of new textile products which might be profitably produced with existing, modified or new equipment and machinery.

Write full particulars including age, education, experience and salary requirements.

P-6850, Textile World, 330 W. 42 St., New York 36, N. Y.

Wanted—Department Head

For non-woven fabric plant in Middle Atlantic states. Must be thoroughly versed in resin formulation and mechanical equipment. Excellent opportunity for the right man.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St. Boston 8, Mass.
Telephone **Liberty 2-6347**

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)
LOS ANGELES: 1111 Wilshire Blvd. (17)

WANTED

Good experienced warp dresser on fancy woolens. Good pay and good future for a man who is ambitious and aggressive.

ROCK RIVER WOOLEN MILLS
Janesville, Wisconsin

An employment advertisement in this EMPLOYMENT OPPORTUNITIES section will help you find the engineers you need. It's an inexpensive, time saving method of selecting competent personnel for every engineering job in the textile engineering field.

POSITIONS WANTED

Dyer—Especially with background on elastic fabrics used for girdle and swim suit wear. Write resume of experience, education, age and salary expected to P-6527, Textile World.

Textile Machinery Technician. Work in India. To take charge factory manufacturing ring-frames carding machines etc. for cotton mills. Submit complete resume, state salary. P-6904, Textile World.

POSITION WANTED

Weaving Overseer, now employed in South America, desires to make change. Experienced on draper and C & K looms, natural and synthetic fibers. Will consider employment in the United States or a foreign country. Available after 60 days. PW-5924. Textile World.

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

BUSINESS OPPORTUNITIES — EQUIPMENT - USED or RESALE

UNDISPLAYED RATE:

$1.20 a line, minimum 3 lines. To figure advance payment count 5 average words as a line.

PROPOSALS, $1.20 a line an insertion.

BOX NUMBERS count as one line additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED RATE:

The advertising rate is $12.65 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page.

EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

Send NEW ADVERTISEMENTS to N. Y. Office, 330 W. 42nd St., N. Y. 36, N. Y. for August issue closing July 18th

DEEP ANODIZING of ALUMINUM

for maximum protection against wear & corrosion

. . . on a custom service basis, applied to your parts. Tubes, rods, extrusions, wire and other finished products also supplied. Consult us!

We do Alumiliting—plain or colored

LUSTRIK * T.M. Reg. INCORPORATED
1235 FRANKFORD AVENUE • PHILA. 34, PA.

FOR SALE
CORDUROY CUTTING PLANT
COMPLETELY EQUIPPED. PRODUCTION ABOUT 100,000 YARDS WEEKLY. EXCEPTIONAL OPPORTUNITY!
FS-6832 Textile World
330 W. 42 St., New York 36, N. Y.

PROFESSIONAL SERVICES

PATENTS
Information concerning procedure furnished upon request, without obligation.

B. P. FISHBURNE
REGISTERED PATENT ATTORNEY
702A McLachlen Bldg. Washington 1, D. C.

SPECIAL SERVICES

Our Textile consultant will cheerfully dye for you. He's a master in all phases of the wet processing of textiles—scouring, wetting, mercerizing, bleaching, dyeing, stripping, sizing, finishing, softening, weighting, waterproofing and mildewproofing. He's yours for the asking on a project or per diem basis. Research and Developing Corporation, 21 East Van Buren St., Chicago 5, Ill.

WANTED

Anything within reason that is wanted in the field served by Textile World can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

If there is anything you want
that other readers can supply
OR . . . something you don't want—
that other readers can use—
Advertise it in the
SEARCHLIGHT SECTION

1805 AUCTION 1955

Liquidation Sale

TEXTILE MACHINERY

and Manufacturing Equipment of

MERION WORSTED MILLS

Manufacturers of Fine Men's Wear Fabrics and Uniform Fabrics; also French Spun Worsted Yarn

West Conshohocken, Pa.

THURSDAY, JULY 14, 1955, AT 10 A.M.

daylight time on the premises

10 Warner & Swasey Dual Head Pin Drafting Machines; 6 McGlynn Hays 400 Spindle Herring Tape Drive Spinning Frames; 20 Whitin Model FW-3 200 Spindle Worsted Spinning Frames; 26 Sets of Pneumafil Units for Spinning Frames; 5 Whitin Single Roll 200 Spindle Model "L" Trap Twisters; 16 Fales & Jenks 200 Spindle Trap Twisters; **2 Foster 100 Spindle Model 57 High Speed Doublers;** 4 Foster 120 Spindle Model 102 High Speed Winders; **2 Whitin Schweiter Type MF 27 Spindle Filling Winders; 24 Crompton & Knowles 82 inch W-3 Convertible Automatic Looms; 48 Compton & Knowles 82 inch W-3 Automatic Looms;** 11 S.A.C.M. 16 to 40 Head Drawing Frames; 7 S.A.C.M 3 to 6 Head intersecting Gill Boxes; 11 Platt Bros. 6-8-16-34-40 Head Drawing Frames; **Hunter 8 Pass Induced Draft Cloth Tentering Dryer; Parks & Woolson 66 inch Double Shear;** 5 Davis & Furber Dressing Reels; Saco-Lowell Warp Slasher; 4 Hunter Fulling Mills; 2 Hunter 8-string Washers; **Titan Warp Tying-in Machine.**

Lot Miscellaneous Textile Machinery, Fibre and Wood Box Trucks, 1 to 50 H.P. Electric Motors; **Electrical, Tinsmith and Machine Shop Tools and equipment;** Laboratory Equipment, Fluorescent Lighting Fixtures, Office Furniture and Equipment, etc.

Sale by order of Merion Worsted Mills

Descriptive illustrated catalogue upon application to

SAMUEL T. FREEMAN & CO.

Auctioneers

"A century and a half of selling at auction"

1808-10 CHESTNUT STREET PHILADELPHIA 3, PA.

80 Federal Street, Boston 10, Mass.

FOR SALE COTTON MACHINERY

BOOTT MILLS, INC.

Lowell, Mass.

Quantity	*Description*
8	S-L Lattice Openers
4	S-L Vertical Openers
8	S-L 2 Beater Single Process Pickers, 4 with Blending Reserve
1	Kitson 2 Section W-3 Waste Machine
1	Logeman Hydraulic Waste Press
290	40"H & B Cotton Cards
2	Abington Card Stripping Systems
99	Dels. S-L Conventional Drawing—Cushion Top Rolls
2	S-L 10x5x8x104 sp. Slubbers with Whitin Superdraft
6	S-L 10x5x8x108 sp. Slubbers with Model M L.D.

SPINNING

89	S-L Tape Drive Ring Spinning Frames 3" Gauge
29	Frames 276 sp. ea. H & B & Roth L.D.
60	Frames 252 sp. ea. H & B, Roth & Whitin Casa-Blanca L.D.

WINDERS & WARPERS

9	Abbott Cone Winders
2	Model 65, 4 Model 64, 3 Model 62
1	Abbott Auto. Quiller, 120 sp.
4	High Speed Warper (1—Wameset, 3 Entwistle) with Magazine Creels

LOOMS

100	Draper 64" Model H Looms, M. D.
193	Draper 44" Model H Looms, M. D.
50	Draper 44" Model XK Looms, M. D.
25	Draper 40" Model X Looms, M. D.
52	Draper 48" Model K Dobby Looms, M. D.
98	Draper 44" Model K Dobby Looms, M. D.
119	Draper 32" Model K Looms, Plain, Dobbies and Jacquard
50	Draper 24" Model E Dobby Looms, M. D.
17	Draper 22" Model K Dobby Looms, M. D.
3	Barber-Colman Model LC Tying-in-Machines
1	P & W 4 Blade 50" Motor Driven Shear, with Railway Sewing Machine, etc.

FINISHING

1	Continuous Bleaching Unit: B. E. C. Co. "J" Boxes, Foxboro Controls, Perkins Bin Pilers
2	Morrison S. S. Kiers (Bleaching Unit)
2	Weisner-Rapp S. S. Hump Washers 12 sections, 1947
23	Stainless Steel Dye Jigs 40" and 50"
1	Mercerizer 48" x 60' Clip Tenter C/W Padder & recouperators
1	Set of 50 Copper Dry Cans 23" x 45" Padder, Expanders, etc.
1	Gessner 90" D. A. 24 Roll Napper

CORDUROY FINISHING

1	Continuous Brushing Unit: 1950 Model
4	54" 10 Brush Dry Treddle Brushing Machines
1	3 Roll Dry Rotary Brusher
2	5 Brush 54" Wet Cross Brushers
1	60" 2 Roll Padder
1	Set, Textile, 12 Copper Dry Cans 60" x 110"
1	Set, Textile, 9 Copper Dry Cans 60" x 90"
22	Firsching Corduroy Cutting Machines 44" & 54"

Scutchers, Singeing Machines, Compressors, Trucks, Cans, Bobbins, etc.

GEORGE D. FLYNN, JR.

31 Canal St — **LIQUIDATING AGENT** — **Providence, Rhode Island**

Address all inquiries to Mr. C. Selden Jopp, Agent, at:

BOOTT MILL — **Lowell, Massachusetts** — ***Tel.* Glenview 7-7521**

BIALEK'S BEST BUYS

68—C&K, C-4, 80" R.S., 4x1 AUTO. CONV. TO 4x4 DOBBY, 24" FLANGE BEAMS, COMPLETE WITH HARNESSES; YEAR 1950

1—SIPP 101" HI-SPEED, ALL-METAL WARPER WITH SIPP MAGAZINE CONE CREEL

1—JOHNSON SILK SYSTEM SLASHER, 74"x30", 7 DRUM S.S. WITH TEFLON

15—SPINDLES WHITIN AUTO. QUILLER

20—C&K, 4x4, GEMHEAD MISC. MILL SUPPLIES

THEODORE BIALEK & CO.

6704 EMPIRE STATE BLDG.
NEW YORK 1, N. Y.
LONGACRE 3-4978

JACKSON AT 20th AVE.
PATERSON, N. J.
LAMBERT 3-5886

MODERN MACHINERY — For Sale

2	P. & S. 48" Picker Feeds, 1950
2	Fidelity Skein Reels, 1949
1	P. & S. Truck Skein Dryer, 1947
1	P. & W. 84" x 36" Cloth Steamer, 1950
1	P. & W. 72" x 36" Semi-Decater, 1948
1	P. & W. 74" Cloth Rolling Mach., 1952
2	Gessner 72", 18 roll, D.A. Nappers, 1942
1	Gessner 66" Hydrolizer complete, 1942
24	C. & K. 66", W3 Conv. Looms, 1946
2	Collins 6" Ring Twisters, 8" ga., 1951
2	Whitin, 4½" Ring Twisters, Mod. R, 1951

FRANK K. WHEELER CO.
1837 Ruan St. Philadelphia 24, Pa.
'phone JEfferson 5-4771

MILLER MACHINERY CO.

66 RAILROAD AVE. PATERSON, N. J.
Tel. Sh 2-5467-8

Textile Machinery and Supplies

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160—Draper XD Looms, 1945, 46" Cloth, 52" reed space, 20 harness dobbies, M.D.

130—Draper XD Looms, 1948, 50" Cloth, 57" reed space, 20 harness dobbies, M.D.

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336—Crompton & Knowles, S-6 Looms, 1947, 1950, 50" Cloth, 58" between swords, 20 harness dobbies, M.D.

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R. Weaving and Warp Preparation Equipment and Supplies
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Acme Steel Co.	62	P
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Allentown Bobbin Works, Inc.	178	T
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American Monorail Co.	52	P
American Pulley Co.	61	Q
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Carbide & Carbon Chemicals Co., Div. of Union Carbide & Carbon Corp.	10	C
Celanese Corp. of America Chemical Div.	51	C
Century Electric Co.	18	F

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Link-Belt Co.	7	Q
Lockwood Greene Engineers, Inc.	42	M
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Meadows Mfg. Co.	166	Q
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N. Y. & N. J. Lubricant Co.	182	M
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Nopco Chemical Co.	63	C
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Smith, Drum & Co.	171	E
Societe Alsacienne De Constructions Mecaniques	120	T
Solvay Process Div., Allied Chem. & Dye Corp.	177	C

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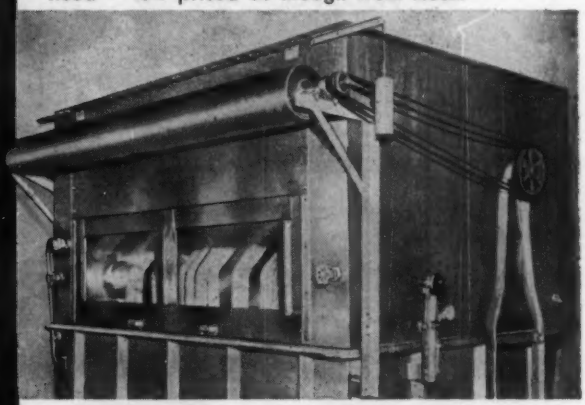

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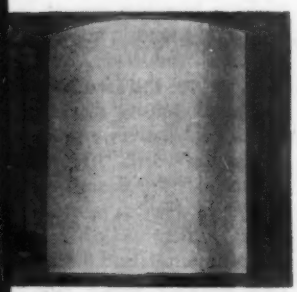

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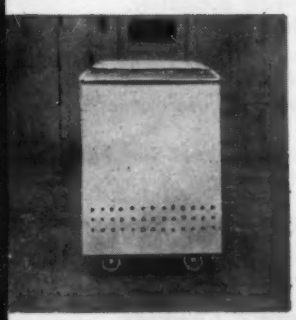

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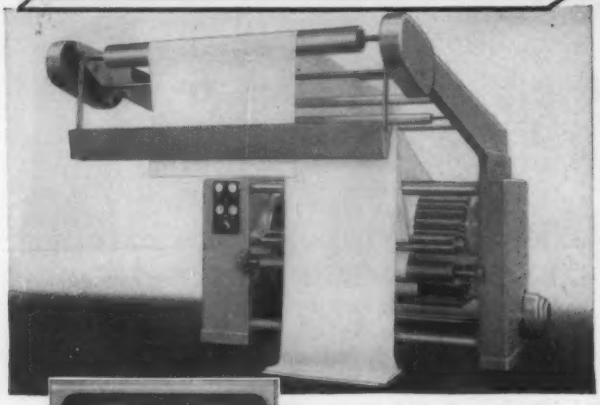

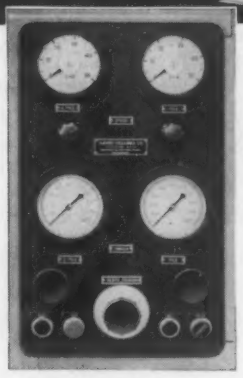

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Super Tufter Machinery Co.	30	E
Taylor Co., Halsey W.	196	N
Taylor Instrument Cos.	40	K
Taylor-Stiles & Co.	208	T
Texas Co., The	4th Cover	M
Texnovo S. P. A.	225	R
Textile Machine Works	55	L
Toledo Scale Co.	170	K
Tompkins Bros. Co.	192	L
Torrington Co., The (Bearings)	207	O, Q
Torrington Co., The (Needles)	179	L
Towmotor Corp.	162	P
Turbo Machine Co.	5	L
Union Bag & Paper Corp.	41	P
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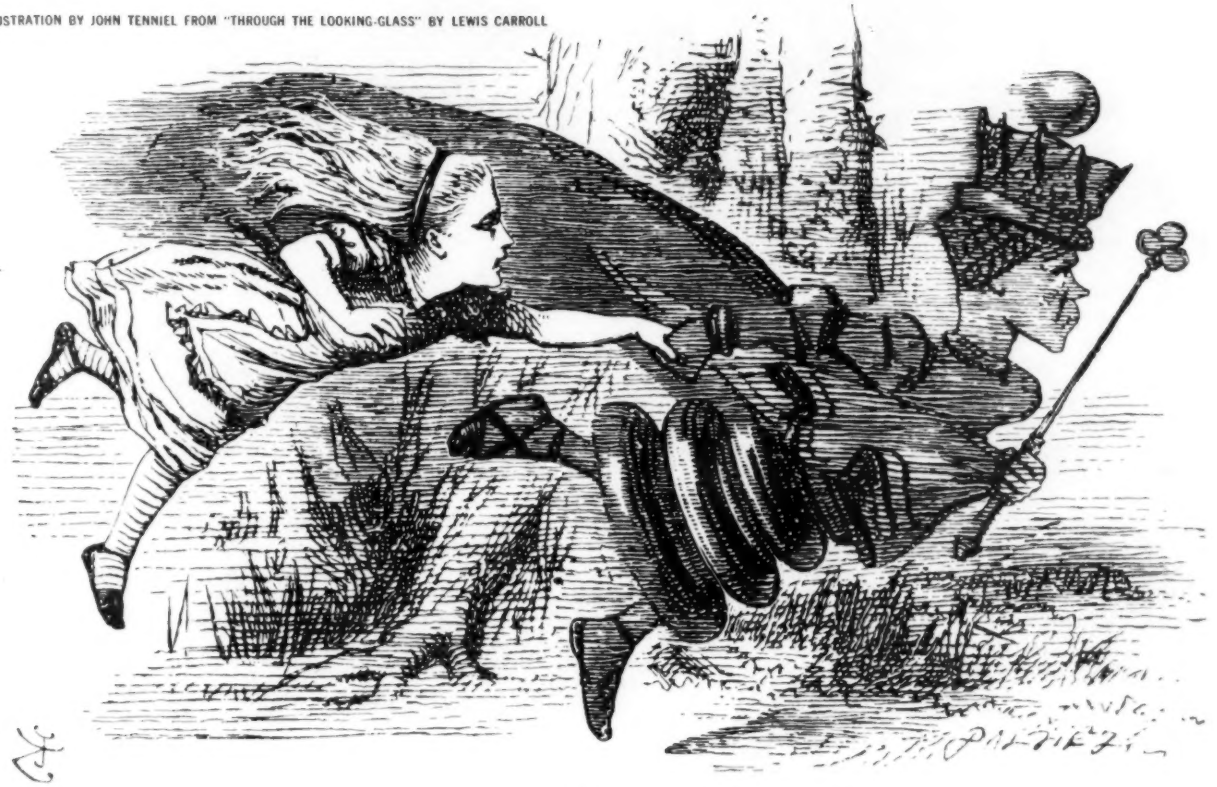

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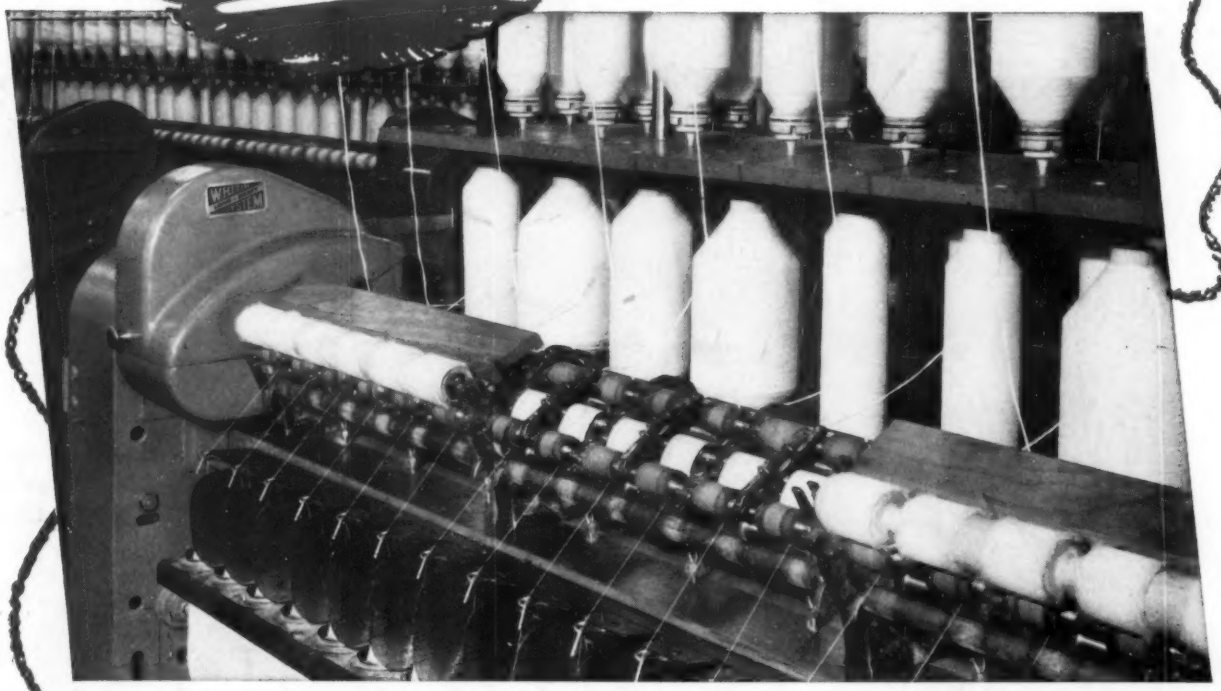

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